

ADMINISTRATION OF HEALTH AND PHYSICAL EDUCATION IN COLLEGES

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**TO MY SONS
BILLY AND JIMMY**

PREFACE

This volume represents an attempt to bring together desirable standards and policies in the administration of health and physical education in the colleges and universities of the United States, and it serves as a sequel to a former study dealing only with programs for men. The hazards involved in such an undertaking are fully realized in view of the fact that no two persons are faced with the same administrative problems. Moreover, personal bias and experience must inevitably enter into a work of this character because of the small amount of objective evidence available. Doubtless many experienced administrators will disagree in part or in full with many of the views expressed herein. Others, perhaps, will question the desirability of setting up idealistic standards which they will accept in theory but which cannot be attained in practice, at least at the present time. If we believe with James Russell Lowell that "not failure but low aim is a crime" and with Sir Phillip Sydney who wrote:

"Who shootes at the midday sunne,
Though he be sure he shall never hit
The marke, yet as sure he is that he
Shall shoote higher than who
Aymes but at a bush,"

then we must admit the need for guiding standards and policies however difficult of attainment they may be.

In spite of the difficulties, which have been recognized from the first, there appears to be a place for a volume of this kind. Regardless of experience, few persons are competent to undertake the responsibilities involved in administering a program of health and physical education in a college or university without having developed some kind of satisfactory basis for their administrative procedures. Certainly much remains to be done; in determining objectives; in unifying and coordinating various phases of health and physical education; in providing more sanitary surroundings, and better health service and instruction; in developing courses of study or programs of activity worthy of credit; in determining individual needs; in measuring capacity, ability, and progress; in developing better standards

for indoor and outdoor facilities; and finally in providing more skilled leadership.

It is not claimed that this book solves these problems or that the procedures advocated are applicable in all institutions. The standards and policies proposed are intended as guides to administrators and other workers in the college field. Some of these practices already may be in operation. Others may prove undesirable in certain situations. Still others may stimulate thought, or suggest an analysis of the strong and weak points in the program and furnish a basis for planned and intelligent improvement.

This book has been designed not only as a guide to administrators, coaches, and instructors in this field, but also as a textbook for undergraduate and graduate institutions giving courses in health and physical education. College presidents and deans should find this volume a useful measuring device in evaluating their programs. The footnote extracts and the many references to supplementary readings should prove useful to those who desire all points of view.

The author wishes to acknowledge his indebtedness to all who assisted in the preparation of this book. Appreciation is extended to former students in Education 193B-194B at Teachers College for many stimulating questions and discussions, to the many colleagues in the profession who kindly permitted use of records and forms, and to authors and publishers who have granted permission to quote from their copyrighted volumes.

Especial appreciation is expressed to Mr. Carl L. Nordly, and to my wife, Mary Cave Hughes, for their critical reading of the entire manuscript. They are in no way responsible, however, for the procedures advocated or the errors and omissions. The contents of the volume, including mistakes, are my responsibility alone.

W. L. H.

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ADMINISTRATION OF HEALTH AND PHYSICAL EDUCATION IN COLLEGES

CHAPTER I

INTRODUCTORY

Historical.—In colonial days before the appearance of institutions of higher learning, the people were busy in occupations which demanded physical labor. All worked together in the building of homes and the clearing and planting of fields. After the colonists were fully established, the well-known English and European forms of recreation began to appear. "Corn-husking," "log rolling" and "country dance" festivals flourished. Hunting, riding, racing and skating were popular. Toward the end of the colonial period boys of the English settlement played football, cricket, and many other games.

In the early schools of America no place was given to play and recreation. Health and physical education were not even considered. The academies, which became the most popular secondary schools in the country, placed some emphasis on the physical welfare of students. Although it was not customary to set aside time for physical activity as a regular part of the work, after-school participation in games and sports was encouraged.

Health and Physical Education for College Men.—It was not until 1826, when the German refugee, Charles Follen, introduced the Jahn gymnastics to the students at Harvard, that the first college gymnasium in America was established. "On a piece of ground called the Delta, the students, directed by Follen, constructed some crude apparatus consisting of bars, ladders, wooden horses, and suspended ropes, and laid out places for running and jumping. It was a German turnplatz transplanted to America."¹ Gymnastic exercises were not made compulsory at Harvard, but students manifested great interest in them. The development of a gymnastic program, usually out of doors, followed rapidly at Amherst, Brown, Dartmouth, Williams, and Yale. Yale's outdoor gymnasium was similar to that of Harvard. Classes were held from two to five times per week and instruction was of-

¹ Rice, E. A. *A Brief History of Physical Education*. A. S. Barnes and Company, New York, 1929, p. 154.

ferred for parallel and horizontal bars, wooden horses, ladders, masts and ropes, and in some institutions fencing and boxing were taught. The Boston Medical Intelligencer of September 25, 1827 reports that a visitor to the college grounds at Williamstown found a large number of students, headed by their venerable President, building a gymnasium. This led to the statement "We may hope that our students will no longer, as in former years, leave college with emaciated frames and pallid countenances, through want of proper exercise."²

By 1830 interest in gymnastics had so waned that scarcely any institutions were giving any attention to them. On the other hand, during the period between 1830 and 1850 many American educators held the opinion that the body as well as the mind needed attention. In the eighteen fifties came the revival. Literature on the subject increased. The students of Princeton and of the University of Virginia formed gymnastic and athletic clubs. Harvard built her first gymnasium and inaugurated a program of intercollegiate sports. A nation-wide interest in physical development which appeared just prior to the Civil War had its influence in the colleges and universities.

President Stearns of Amherst wrote in 1855:³ "No one thing has demanded more of my anxious time than the health of the students. The waning of the physical energies in the midway of the college course is almost the rule rather than the exception among us, and cases of complete breaking down are painfully numerous." The vision of the Amherst officials resulted in the completion of a gymnasium in 1860 and in a broad program of student health and physical education. A "Department of Physical Culture" was established, and a physician with the rank of professor was made director with duties defined as follows: "to give instruction to the students in gymnastics; to give lectures on hygiene and other topics pertaining to the laws of health and life, including a general knowledge of anatomy and physiology; and to watch closely over the general health of the students."⁴ This department, in charge of a thoroughly educated physician with a seat in the college faculty and with the title of Professor of Hygiene and Physical Education, was the first of the modern type to be established in a college or university. Under Dr. Edward Hitchcock, who directed the department from 1861 until his death in 1911, light exercises and tactics characterized the Amherst program.

Although Harvard and Yale completed gymnasia in 1859 and 1860, respectively, neither followed Amherst's far-sighted action in estab-

² Leonard, F. E. and McKenzie, R. T. A Guide to the History of Physical Education. Lea and Febiger, Philadelphia, 1927, p. 250.

³ Rice, E. A. Op. cit., p. 206.

⁴ *Ibid.*, p. 207.

lishing a department nor in appointing a professor to carry on a program of health and physical education. Both institutions required students to pay a fee for the privilege of taking courses in gymnastics. Yale also charged a fee for the use of the baths, but Harvard had no such luxury. Amherst, Bowdoin, Dartmouth, Princeton, Wesleyan, and Williams were other men's colleges to build gymnasia. Oberlin, a coeducational institution, also belongs to this group.

In the seventies other coeducational institutions, Beloit, the University of Wisconsin, and the University of California, were added to the list. Harvard, in 1879, built her second, the Hemenway Gymnasium and appointed Dr. D. A. Sargent as Assistant Professor of Physical Training and Director of the Hemenway Gymnasium. Since Dr. Sargent believed in individual differences in physical characteristics and needs, he did not advocate compulsory and uniform exercises. Since he did not believe the usual gymnastic apparatus suited college students, he designed many mechanical contrivances to correct individual defects. For twenty years Harvard held a leading position in physical education, and in the eighties particularly, her gymnasium and equipment became the model for many institutions. It was customary for the colleges to employ a physician as head of the department because of the desire for a man with training equal to that of the ordinary college professor.

Student health work, until about thirty years ago, was developed largely around the gymnastic programs, although many institutions did establish infirmaries for the care of sick students. There was a growing feeling that something more than a gymnasium program was needed to handle adequately the question of health among students. The general emphasis upon bacteriology and the quarantine of contagious diseases were, no doubt, in part responsible. Abbott⁵ and Bardeen⁶ describe the appointment of faculty committees on sanitation or hygiene or similar title, and although such committees did function on certain questions having to do with sanitation it was soon found imperative to employ physicians to carry on a full program of health education.

California apparently provided one of the first health services to students, especially among the larger institutions.⁷ It was inaugurated in 1900 and expanded so rapidly that by 1907 the early medical

⁵ Abbott, A. C. "Safeguarding the Health of University Students," *Transactions, Fourth International Congress on School Hygiene*, 1913, Vol. 5, p. 151.

⁶ Bardeen, C. R. "Supervision of Students at Wisconsin," *Modern Medicine*, October, 1919.

⁷ Reinhardt, G. F. "University of California Infirmary Student Health Protection," *Transactions, Fourth International Congress on School Hygiene*, 1913, Vol. 5, p. 161.

emphasis was augmented by a curative, preventative, and educational health program.

Present Status.—It is difficult to determine the exact present status of health and physical education for men in American colleges and universities.

In 1921 Meylan ⁸ reported the improved status of physical education in American colleges as shown in several particulars:

1. Physical education was increasingly being placed on the same basis as other subjects, with credit on the same basis as other subjects.
2. The instructors were in much larger numbers given professional rank rather than merely an administrative position without faculty vote.
3. Hygiene courses were more often given by the physical education teachers than formerly.
4. Intercollegiate athletics were now more largely controlled by the physical education department.
5. Intramural athletics for the mass of students had developed to a large degree.
6. Student enrollment in elective courses in physical education had increased during the last ten years.
7. The equipment for physical education, particularly for intramural athletics and for swimming, was much larger than at any previous period.

In 1921, Edmunds ⁹ reported that forty institutions in the United States claimed to have organized departments of student health. Storey, ¹⁰ in 1927, found 162 out of 178 (91 per cent) colleges (including teachers colleges), universities, and normal schools reported some type of health supervision of the activities and environment of the students. One hundred and forty of 199 of the same institutions (70 per cent) had an organized student health service which included one or more required health examinations of students. One hundred and twenty of 202 institutions in this group (59 per cent) reported required informational hygiene courses, and 187 of 197 institutions of this type (95 per cent) indicated an organized program of required physical education.

In 1931 there were 94 colleges and universities represented at the

⁸ Meylan, G. L. "The Status of Physical Education in American Colleges." Report of Committee of the Society of Directors of Physical Education in Colleges, 1921.

⁹ Edmunds, W. P. "Student Health Service Survey," *The Nation's Health*, May, 1921, p. 325.

¹⁰ Storey, T. A. *The Status of Hygiene Programs in Institutions of Higher Education in the United States*, Stanford University Press, Stanford University, California, 1927, pp. 24-25.

annual meeting of the American Student Health Association (organized in 1920) and in 1932 the membership of the College Physical Education Association (organized in 1897) had reached the total of 132 persons.

Health and Physical Education for College Women.—The first physical education for girls and women was introduced in the eighteenth century in the eastern coast cities.¹¹ Two types of physical education were employed. Dancing was advocated for exercise as well as for the development of social poise¹² and back boards, which were strapped to the girls to hold their backs rigid¹³ were advocated for training young ladies to hold themselves erect.

In the second and third decades of the nineteenth century, numerous secondary schools for women were founded as a result of the efforts of the early crusaders for the educational rights of women, who believed that women had both the capacity and the need for better education. Many violent protests were voiced that the health of the "females" would be ruined and some educators were aware of the dangers of a sedentary life.¹⁴ To compensate for the inactivity of the student life of the girls, dancing was introduced by Emma Willard, calisthenics were advocated by Catherine Beecher, and Mary Lyon, who opposed dancing, was interested in performance of household or domestic duties. According to Ainsworth, the performance of domestic duties remained at Mount Holyoke College as late as 1912-1913. Calisthenics were not sufficiently popular to survive and were replaced in the latter part of the nineteenth century by gymnastics. Dancing, the third type of exercise for girls, has continued as a valuable phase of physical education down to the present time. Little that was new in physical education for girls appeared from the eighteen thirties to the fifties.

In 1855 Elmira offered collegiate work for women on a par with that of the colleges for men. Many of the present colleges for women were founded between the Civil War period and 1900. During this period four systems of gymnastics (Lewis, Sargent, Swedish, and German) and at least two forms of so-called physical culture (Delsarte and Emerson) were introduced into the United States and advocated for college women as well as for men. Moreover, athletic sports for

¹¹ Ainsworth, Dorothy S. *The History of Physical Education in Colleges for Women*. A. S. Barnes & Company, New York, 1930, p. 2.

¹² Holliday, C. *Women's Life in Colonial Days*. Cornhill Publishing Company, Boston, 1922, p. 88.

¹³ Earle, A. M. *Child Life in Colonial Days*. Macmillan Company, New York, 1889, p. 105.

¹⁴ Ainsworth, D. S. *Op. cit.*, p. 5.

women became increasingly popular during the latter part of the nineteenth century. Fears were frequently expressed that higher education would undermine the health of the women students but objections were met with promises of health care and "physical culture." It gradually became apparent that ill health in college women did not necessarily result from study.

Recent Trends.—An analysis of the factors which have largely determined health and physical education in American colleges and universities reveals at least two distinct periods. The first extends from the beginnings of health and physical education in this country until the World War. The emphasis was on care of diseases, correction of defects, body building, harmonious development, anthropometry, and militarism. The second period is much shorter and extends from the World War to the present time. The emphasis during this period has been education through activities and health instruction. The first era emphasized symmetry, size, structure. The second stresses status, function, education. While the manual training movement in the colleges was at its height, physical education was work and nothing else. From these early beginnings to the later decades of the nineteenth century the American college conceived of education primarily in terms of training the mind. The training of the body was largely a corrective, remedial, or disciplinary procedure.

Today colleges and universities are generally regarded as socializing agencies which prepare students for various aspects of life. For this reason health and physical education activities are becoming increasingly important in the education of the "whole student." The recent development of college health and physical education has been characterized by the tendency to establish and combine departments and services. Increased enrollments and funds have resulted in the establishment of various services, including health supervision of the environment; health service to students; health instruction; required physical education, including restricted and corrective activities; intramural athletics; and intercollegiate athletics. College physical educators everywhere are attempting to improve their programs by a more accurate determination of objectives, better trained instructors, a scientifically determined program of activities suited to individual needs of students, a better coordinated department, a hygiene course which is adequate and interesting, health examinations, tests and measurements for determining progress, increased facilities built or rebuilt according to the best known standards; in short, there appears a country-wide movement to weigh college health and physical education in the balance so that the non-essentials may speedily be eliminated and the essentials improved.

Philosophical.—While it is not the intent in this volume to enter into a detailed philosophical discussion of health and physical education in the colleges, it is important to point to the existing confusion in the minds of members of the profession regarding the purposes for which this phase of education exists. Fortunately, there has been wide recognition that real values do exist, albeit they have been poorly defined.

College health and physical education has undergone some very close scrutiny recently and the support given the program during critical times has been rather surprising under the circumstances. It may be assumed, however, that unless the college administrator of the immediate future develops a course of study or program with very definite aims, activities, and means of measuring progress he cannot hope to justify the retention of his department in the college of the future.

Aims and Objectives.—The ultimate justification for any educational program is its contribution to the life aims and objectives of the individuals who participate in it. If college health and physical education is to play a part in serving college students, its philosophy, aim, and objectives must conform to the philosophy, aim, and objectives of modern education. It is important, therefore, that the college health and physical educator concern himself with certain *educational* and *administrative* aims and objectives for a department of health and physical education in an institution of higher learning. The *educational* aim and objectives have to do with the changes, the development brought about in college students. The *administrative* aims, objectives, policies, and procedures are concerned with the organization, personnel, facilities, and program provided so the educational process may go on.

While the terms *aim* and *objectives* are often used interchangeably, *aim* is used here in the broad, general ultimate sense and *objectives* are considered the more specific, definite means leading to the end or aim.

The Educational Aim.—The aim of health and physical education should be the same as the aim of education. The aim of the part should coincide with the aim of the whole. Various aims of education have been proposed from time to time. Hopkins¹⁵ quotes as many as sixty. These have been classified as follows: education as *culture*, education as *discipline*, education as *growth or adjustment*, and education as *preparation for life*. In spite of the apparent variance, modern educationists seem to be quite generally agreed that education should aim to assist the individual in realizing or developing his vari-

¹⁵ Hopkins, L. T. Curriculum Principles and Practices. B. H. Sanborn and Company, Chicago, 1929.

ous capacities to the fullest possible extent. *Education should aim to help the individual realize his own best self.* This might well be the educational aim of a department of health and physical education for men or women in a college or university. Health and physical education can and should contribute to the complete development of students by helping each to realize his or her *own best self* physically, mentally, emotionally, and socially. If "happiness" and "service" are the ultimates in life, then, health and physical education should assist in the complete development of students to the end that greater happiness is achieved and greater service is rendered by them. While physical educators may emphasize physical activities, they should by no means exclude mental and social activities, which along with the physical, predominate in education.

The Educational Objectives.—What are the educational objectives of health and physical education? Do health and physical education activities for men and women in colleges and universities contribute to any or all of the objectives of education? ¹⁶ If education is interested in the "whole" student rather than the mere training of the mind, if education attempts to help persons do well those major life activities they will most likely need to do, what are those major life activities? An examination of the objectives of education and of health and physical education should prove helpful.

The seven major departments of a school or college representing the seven major life activities as proposed by Watson ¹⁷ are: health, personal relations, vocation, money and goods, social order, recreation, and interpretation of the universe. The seven cardinal principles or objectives proposed for secondary education are similar.¹⁸

Health and physical education certainly can contribute to the health and recreation objectives, and should contribute also to social and moral learnings.

Four objectives for physical education which have gained wide acceptance ¹⁹ in school and college physical education are:

1. Development of the organic systems of the individual through physical activities.
2. Development of neuromuscular systems in general, and particularly in relation to control over certain fundamental skills.

¹⁶ Hughes, W. L. "The Contribution of Intercollegiate Athletics to the Objectives of Education." *Athletic Journal*, November, 1932.

¹⁷ Watson, Goodwin. "The Philosophy of Physical Education." *Journal of Health and Physical Education*, II, September, 1931, pp. 3-6.

¹⁸ Bureau of Education. "Cardinal Principles of Secondary Education." *Bulletin No. 35*, 1918.

¹⁹ Williams, J. F. *Principles of Physical Education*. W. B. Saunders Company, Philadelphia, 2nd ed., 1932, pp. xiii to xvi.

3. Development of certain attitudes toward physical education, and particularly toward play.
4. Development of standards of conduct.

Similar objectives have been proposed by Hetherington,²⁰ Rogers,²¹ Nash,²² Sharman,²³ Nixon and Cozens,²⁴ and others.

The contribution of health and physical education to the first objective is well stated in a recent report:²⁵

"Human vitality is partly hereditary and partly developmental. The power of the vital organs is therefore dependent upon the developmental physical activities of the young. In a sedentary and industrialized society physical education is peculiarly indispensable for the development of vital organs of children *and for the adequate functioning of these same organs in adults.*" This quotation reveals at once the importance of the first objective of physical education. Hetherington²⁶ suggests two hours of big muscle activity daily for young people of college age.

The tremendous increase in leisure time during the last decade is well known and every indication points to a shortening of the working day. College graduates, along with non-graduates undoubtedly will have the opportunity to enjoy various types of leisure and in amounts undreamed of a few years ago. Use of leisure time is one of the most outstanding of the industrial and social problems of this and future generations. Undirected leisure is a menace to society. Physical education and recreation can be listed with literature, music, fine arts, mechanical arts, drama, and countless other hobbies, among the desirable leisure-time activities of education.

The objective having to do with the development of the "play habits and attitudes" assumes unusual importance in an industrialized society. College students need to play, not merely for exercise or health, or for a moral prophylaxis, but for its own sake, for the satis-

²⁰ Hetherington, C. W. *School Program in Physical Education*. World Book Company, Yonkers, N. Y., 1922.

²¹ Rogers, F. R. *Educational Objectives of Physical Activity*. A. S. Barnes and Company, N. Y., 1929.

²² Nash, J. B. *The Administration of Physical Education*. A. S. Barnes and Company, N. Y., 1931.

²³ Sharman, J. R. *Introduction to Physical Education*. A. S. Barnes and Company, N. Y., 1934.

²⁴ Nixon, E. W. and Cozens, F. W. *An Introduction to Physical Education*. W. B. Saunders Company, Philadelphia, 1934.

²⁵ National Committee on Physical Education. "Physical Education Today." *Journal of Health and Physical Education*, March, 1933, p. 4. (*Italics are mine.* W. L. H.)

²⁶ Hetherington, C. W. *American Physical Education Review*, May, 1917, p. 251.

faction that goes with it, and for its educational aspects. The world is full of college graduates, tense and hurried "physical illiterates," who do not know how to play. The play attitude is characterized by joy, happiness, enthusiasm, confidence, and a sense of security that comes with achievement. These qualities, like health, are by-products of interesting activity. They are builders of morale, a trait much needed in America today.

We know now that "standards of conduct" will result from participation in college health and physical education activities. Such standards may be desirable or otherwise, however, since no definite procedure or technique for developing desirable conduct has ever been devised.²⁷ If right conduct has resulted, it has probably been largely incidental or accidental, in contrast to the development of organic systems and sport skills where methods of procedure have been rather definitely established. Certainly the college health and physical educator of the future should give increasing attention to this worthwhile objective.

The objectives of health education are concerned with the development of desirable health habits, health attitudes, health skills, and health knowledge which are related to personal, community, and racial health. The health education of college students should be accomplished by means of a threefold program, including the health supervision of the campus environment, health service to students, and hygiene teaching. Williams²⁸ explains how the hygiene of the environment contributes to health habits, attitudes, and knowledge of young people, if one learns health standards by example, and that health service makes its contribution also, if one learns health standards by practicing them. Students are educated in health through the experiencing of certain services, and activities, as well as through formal instruction.

The Administrative Aim.—Administration has to do with the machinery necessary in conducting the affairs of the division or department so the teaching and learning process may go on. Administration does not exist for itself. It is merely a means, not an end. It ties the various units together in a functioning whole. As has been stated elsewhere²⁹ "physical education should aim to provide skilled leadership and adequate facilities that will afford an opportunity for the individual or group to act in situations that are physically wholesome,

²⁷ Hughes, W. L. *Athletics and Character Education*. Ch. XXI, p. 124 in *Interpretations of Physical Education. Character Through Physical Education*, J. B. Nash, Editor, A. S. Barnes and Company, N. Y., 1932.

²⁸ Burton, W. H. and Others. *The Supervision of Elementary School Subjects*. D. Appleton and Company, New York, 1929, p. 623.

²⁹ Williams, J. F. *Op. cit.*, p. 287.

mentally stimulating and satisfying, and socially sound." This is an administrative aim designed to properly set the stage for the educational process. The terms in the definition need interpretation for college physical education. This interpretation is given in subsequent chapters.

Health education should aim to provide skilled leadership and adequate facilities so that a healthful environment, health service, and health instruction for students may result.

Administrative Objectives, Standards, and Policies.—Prior to 1932 there had been no published source of organized administrative objectives. Persons actively engaged in administration have had no specific guides in well-organized and compact form to which they might turn for information about standards and policies. But it has been realized increasingly in recent years that if the *educational* objectives are to be attained by students certain *administrative* objectives and policies are essential regarding personnel, facilities, and program. Obviously, a list of the necessary administrative objectives would be too long to include here but in a previous study⁸⁰ the writer has developed and evaluated over 800 administrative objectives in the form of standards and policies in the administration of health and physical education for college men. While they were not designed for women, many of them are applicable to the program for women. Many of them are discussed throughout subsequent chapters.

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⁸⁰Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, 1932.

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CHAPTER II

ORGANIZATION AND PERSONNEL

The Problem.—Authors of recent articles and books¹ have proposed various plans for unifying the relationship between the several health and physical education services offered the students. Committees and round table conferences of the College Physical Education Association, the American Student Health Association, and the National Collegiate Athletic Association have given a great amount of time and thought to this problem within the last three years. The National Conference on College Hygiene (1931) made recommendations regarding organization and relationships of health and physical education. A certain few institutions have long had all health and physical education activities combined in one department.² Others have recently reorganized on this basis.³ The great majority have departments or units of service which bear various relationships to each other, and in many institutions a more or less loose alliance exists which grew up rather accidentally. Like our political machinery, much of our organization in administering the college health and physical education program shows haphazard growth and is cumbrous in operation. Many departments, manned with specialists in the several services offered, lack a trained administrative officer. Units of service developed independently or were outgrowths of original

- ¹ a. Hughes, W. L., "A More Unified Administration of College Health, Required Physical Education, and Athletics." *The Journal of Health and Physical Education*, February, 1933.
- b. Fauver, Edwin, "The Relationship of the Department of Student Health to the Department of Physical Education." *Proceedings, Society of Directors of Physical Education in Colleges*, 1933, p. 44.
- c. Nichols, J. H., "The Inter-relationship of Physical Education, Intramural and Intercollegiate Athletics." *Proceedings, Society of Directors of Physical Education in Colleges*, 1931, p. 64.
- d. Langton, C. V., "A Unified College Health Program." *Proceedings, American Student Health Association*, 1930, p. 127.
- e. Diehl, H. S., "The Advantages and Disadvantages of Placing Health Service, Physical Education, and Athletics in One Administrative Unit." *Proceedings, American Student Health Association*, 1931, p. 140.
- f. Williams, J. F. and Hughes, W. L., "Athletics in Education." W. B. Saunders Company, Philadelphia, 1930, p. 135.
- g. *Proceedings, National Conference on College Hygiene, National Tuberculosis Association*, 450 Seventh Avenue, New York, 1931, p. 68.

² Illinois, Rochester, and Wesleyan are examples.

³ Pennsylvania, Boston.

groupings. As a result of this, officials who are responsible for the promotion of health and physical education in the colleges are often confronted by situations dominated by local tradition, vested interests, entrenched prejudices, political influences, and an unsympathetic personnel. Such varied interests have frequently made it incumbent on administrators to pursue policies inconsistent with good management. Changes and adjustments inaugurated are likely to be the ones which seem most expedient at the time.⁴

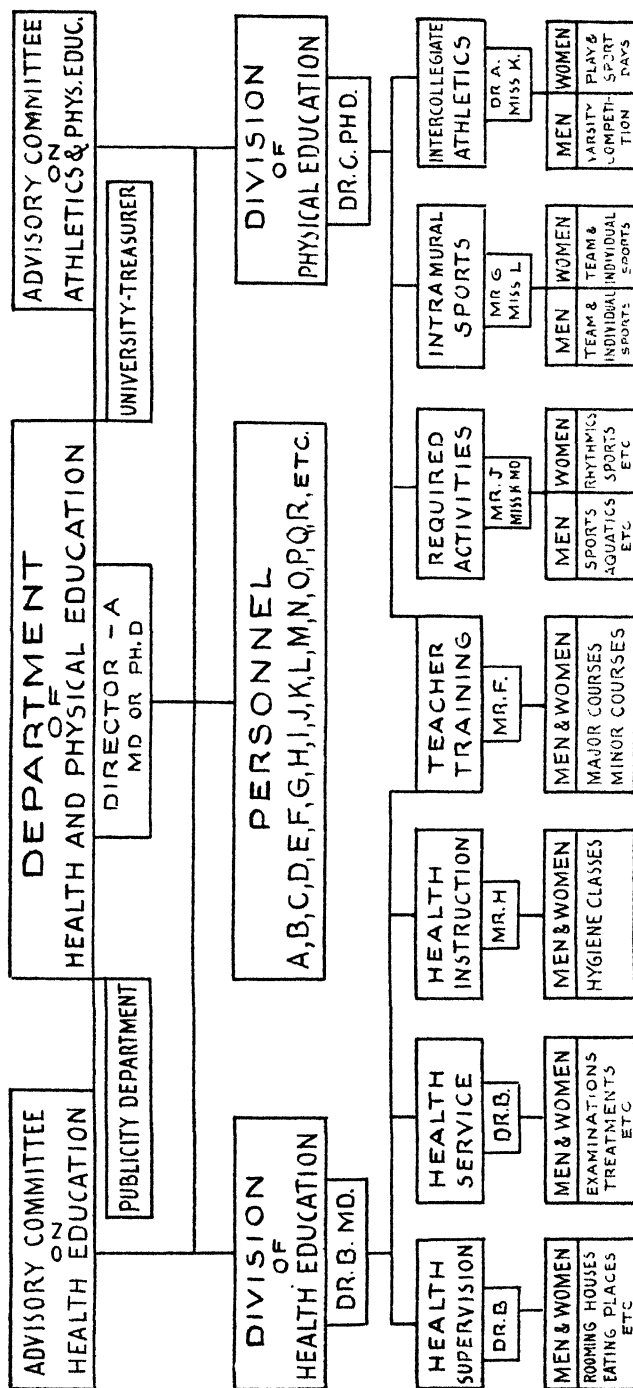
There is, then, undoubtedly a need for a reorganization of health and physical education in many colleges and universities. One division should not overlap and interfere with another. If administrators are not driven to exasperation the student must surely be. He, "like all Gaul, may be divided into three parts, a part of him falling to the Student Health group, a part to the Department of Physical Education, and another part to Intercollegiate Athletics."⁵ No one who gives careful and unbiased thought to the matter will deny the need of the reorganization of college health and physical education in the interest of the students as well as in the interest of economy and efficiency.

A Department of Health and Physical Education.—It is contended here that all college health education and physical education should be organized into a Department or Division of Health and Physical Education. Health education should include the hygiene and sanitation of the campus environment; health service to students by examinations, conferences, medical treatment, control of communicable diseases, etc.; and health instruction or hygiene teaching. These services constitute health education in its broader sense. All should be educational. More should be included in the term "health education" than merely the formal instruction in hygiene. This narrow view has tended to obscure the important and indispensable contributions which the other phases of the program have to offer to the student. It has been contended and defended elsewhere⁶ that health supervision of the environment is health education if one learns health standards by example, and health service is health education if one learns health standards by practicing them. Hygiene and sanitation need not imply mere inspection. Health service need not imply a mere clinical procedure. Both can and should be as definitely educational as the formal instruction or hygiene teaching.

⁴ Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1932, pp. 1-2.

⁵ Fauver, Edwin. *Op. cit.*, p. 46.

⁶ Williams, J. F. *Principles of Physical Education*. 2nd ed., W. B. Saunders Company, Philadelphia, 1932, pp. x-xi.



A COLLEGE OR UNIVERSITY DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION. NOTE THE COORDINATION OF ALL PHASES OF THE PROGRAM. THE DIVISION OF DUTIES OF THE MEMBERS IS INDICATED IN CHAPTER XVIII.

Physical education should include the required activities, regular, restricted, and corrective for men and women; intramural athletics for men and women; intercollegiate athletics for men, play and sport days for women; and teacher training for men and women in institutions with adequate staff and equipment to offer such a course.

The diagram on page 15 shows health and physical education organized in one department or administrative division, and directed by one person directly responsible to the president and trustees of the institution. The diagram attempts to show not only the close relationship among the various units but also the fact that each member of the staff is expected to perform duties in any or all of the several units in which he or she is qualified.* This set-up implies that staff members are qualified to offer various services. This organization should facilitate administration, prevent overlapping, eliminate waste, reduce expenses, and prove superior in many ways to former organizations. No institution can afford today to keep a specialist on the staff who is qualified to render only one service such as the coaching of football or the teaching of swimming or hygiene.

The Departmental Director.—The director or dean of a department of health and physical education in a college or university should be trained as an educator-administrator, and he should be an expert in at least one phase of the health or physical education program. The most important qualification, however, is his ability to get along with people. He should be an M.D. or Ph.D. with professorial rank. In any event he should consider himself an educator rather than a mere curer of disease or a coach of athletics. The health education division within the department should be directed by a full-time physician properly licensed to practice in the community, and especially trained as an educator. It is important for this official to understand the emphasis should be educational, rather than clinical. This division might well have an advisory committee on health education appointed by the president with the advice of the director and composed of deans, personnel officer, local physician, physical educators, and faculty members from departments closely related to health.

The Health Education Staff.—The health education staff should include men and women physicians, nurses, dentists, mental hygienists, nutrition worker, and sanitarian. These individuals should be expert in their special fields, and trained to assist in other phases of the whole program.

Physicians.—Physicians are often expected to assist with: the health supervision of the college environment, instruction in hygiene,

* See the Wall Chart of Dutes of the Staff, Chapter XVIII, p. 343.

medical treatment, teacher training, the examining of athletes and other students, the teaching of required physical education activities, and even the coaching of athletics.

Forsythe⁷ states that one physician per 1000 students will be required for efficient work. It was suggested at the National Conference on College Hygiene⁸ that the minimum number of full time physicians or equivalent thereof should be approximately one to five hundred students. Variations in local conditions (urban, rural), the natural availability of physicians, the proximity of medical schools, adequacy of equipment, additional personnel, and clerical help, and the policy of the institution make it difficult to specify a definite ratio.

It seems incredible that there are colleges anywhere unable to employ a full-time physician. Most colleges, even on the verge of bankruptcy during a depression, can provide instructors in Latin and higher mathematics. It is a matter of relative values. The question at once arises: Are college officials interested in the education of the "whole student" or merely in "training the mind"?

Other Health Educators.—At least one full time nurse for every 500 to 1000 students⁹ is also needed. One nurse to every six infirmary beds seems a fair standard to maintain. Extra nurses should be available for special duty on special cases, although some institutions will find it necessary to require individual students to pay for such services.

Other staff members which should be provided by the institution or available in the community are medical and surgical specialists, a well-trained laboratory technician, a trained nutrition worker, assisted by a dietitian and a social worker, and a psychiatrist or psychological counsellor.

The director of the division of health education should be vested by the county, city, or state with complete power for maintaining the public health on the campus. If this is not feasible, he should be granted the power of deputy.

The Physical Education Staff.—The diagram further shows physical education composed of activities for men and women. Instructors should be selected who are specialists in at least one phase of the program, and who, in addition, are trained in a wide variety of the activities of the department. Competent staff members today are usually qualified in athletics, swimming, intramural activities, teacher training, or hygiene teaching, etc., in addition to their specialty. The

⁷ Forsythe, W. E. "Health Service in American Colleges and Universities." Bulletin No. 11, Vol. 28, University of Michigan, Sept. 11, 1926.

⁸ Proceedings, "National Conference on College Hygiene." Op. cit., p. 21.

⁹ Hughes, W. L. The Administration of Health and Physical Education for Men in Colleges and Universities. Op. cit., p. 33.

necessary training for a position in an organization of this kind should include at least a college degree, an undergraduate major of approximately 40 hours in health and physical education, and a master's degree or its equivalent in health and physical education. Such training implies the same faculty rating that equivalent training would command in other departments.

The day is rapidly passing when the director of health and physical education will secure a person who can do only one thing, such as coach football, teach formal exercises, or instruct in hygiene. It is no longer necessary or economical to select a person so narrowly trained. The number of competent persons trained to coach athletics, teach hygiene, instruct in required physical education activities, or assist in the health examination of students is increasing rapidly. There should be at least one full time instructor or assistant for every 250 students enrolled. This should be the maximum ratio. A ratio of one to 150 or 200 would be more desirable.

Administrative Standards and Policies.—It is clearly apparent that no one would be competent to direct a department offering such a variety of services to students without having developed some satisfactory basis for his administrative procedures. Standards and policies in the administration of health and physical education in colleges and universities will be needed. Such standards and policies are now available¹⁰ and may be used as guides by administrators in analyzing the strengths and weaknesses of their programs.

Principles of Administration.—In addition to the administrative guides referred to, the director should have clearly in mind certain principles of administration.

Central Responsibility.—The first principle of administration is that of central responsibility. No organization or situation involving human relationships among a number of individuals can hope to perform efficient service without it. Governments, armies and navies, business; all recognize the need for it. General education has discarded dual administration for the line and staff organization with central authority.

Division and Definition of Duties.—This is an age of specialization. The organization proposed requires specialists but it also demands that they have other qualifications and interests. It is important not only that the director divide the various duties of his department among staff members but that the duties of each person be very definitely defined. Many examples could be cited where an administrator has failed to define the exact duties expected of the

¹⁰ *Ibid.*, Ch. III.

various instructors and jealousies and ill feelings have arisen over apparent overlapping of responsibilities.

It is also important that each staff member know the exact position and responsibility expected of him or her before accepting a position. It should be needless to state that a knowledge of the exact duties assigned does not imply unwillingness to perform more than the assignment calls for.

Delegation of Authority and Responsibility.—One mark of an administrator is his or her ability to delegate authority and responsibility. Most directors delegate too little authority, few delegate too much. The successful administrator does not perform routine and detailed tasks. In a large system he cannot assume full and direct responsibility. He must rely on his staff to administer many things, so he delegates certain responsibilities to them. The delegation of responsibility and authority, however, run parallel. The latter must accompany the former. The officer who assigns tasks without the authority to carry them out is violating this important principle of administration. Unquestioned authority and responsibility encourages and initiates action. Credit for success and responsibility for failure should accompany the assignment. The staff member who is assigned the management of a large track meet should be given full authority and responsibility to carry out the project. Credit for a well-managed meet should not be claimed by the director. The principle applies in coaching football, in organizing and promoting a program of intramural athletics, in teaching hygiene, or in promoting a dance or corrective program. This, sometimes called the principle of initiative, means that plans and programs should be formulated by the person who is to exercise them, subject always to the approval of the next higher authority in the system. Surely the coach has a right to be consulted in the formulation of a schedule.

Integrity and Adaptation.—Another principle demands that a department composed of specialists with definite divisions of duties shall serve as parts of the whole rather than as independent units. The vested interests, entrenched prejudices, political influences, jealousies, and bickerings caused by specialization have been mentioned above. The health service physicians have not always cooperated with the coaches and the instructors in required physical education and vice versa. The coaches and the so-called "physical directors" have frequently quarrelled. In some situations ill feeling exists between the departments of physical education for men and for women. Possibly the feeling has been between the "director of athletics" and the college physician,—neither may be qualified but each may desire to direct the whole program. Efficient and effective organization shall use maxi-

mally the special capacity of each staff member and to some extent other abilities which each possesses.

Administrative Participation.—Each member of the staff shall participate as fully as possible in the determination of administrative procedure. The hygiene and sanitation of the college environment should be the concern of all the staff in health and physical education. Each individual instructor should have a contribution to make; in developing a program of regular or restricted activities in physical education; in the teaching of required personal hygiene to Freshmen; in developing tests, and marking or grading systems; etc. The principle refers to the determination of policies rather than to details in carrying out the policies. It is evident that such a principle will promote understanding.

Human Welfare.—Finally, it is most important to keep in mind, that all relationships between staff, and between staff and students, are based on the fact that each is a human being rather than material equipment. Every policy should be determined by its contribution to the welfare of the students. This principle insists that students shall not be examined as unique specimens of disease, that athletes shall not be coached as automatons or mere cogs in a machine, and that activities will be selected on their contribution to the education of college students rather than upon tradition, special interest, or gate receipts.

The type of organization proposed above requires a well-trained personnel and one which keeps itself informed regarding modern tendencies in the field.

Other Types of Organization.—The organization of the School of Hygiene and Physical Education at Stanford University illustrates another plan. The divisions of the School are: (1) The Division of Informational Hygiene, concerned with classroom courses in the principles and practices of individual, group and societal hygiene (open to men and women); (2) Men Students' Health Service, (3) University Health Service, concerned with the environmental hygiene of all campus residents; (4) Physical Education Activities for Men; (5) Division of Professional Education (open to men and women). The General Director is Medical Adviser of Men, Chairman of three Committees (1) Public Health, (2) Student Hospital Fund, and (3) Athletics; and Executive Officer of the Athletic Board of Control.

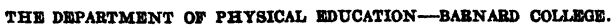
The diagrams on pages 21-22 show three typical college organizations, one with physical education for men and women combined under one director, one for men only, and another for women.

Regardless of the type of organization existing in a particular institution the worthwhileness of the program will depend in the long run on


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graph TD
    A[BOARD OF TRUSTEES] --> B[PRESIDENT AND FACULTY]
    B --> C[DIRECTOR]
    C --> D[STAFF]
    C --> E[ADVISORY COMMITTEE]
    C --> F[DIRECTOR OF ATHLETICS]
    C --> G[DIRECTOR OF MAJOR PROGRAM]
    C --> H[DIRECTOR OF REQUIRED PROGRAM]
    C --> I[DIRECTOR OF INTRAMURALS]
    F --> J[COACHES]
    G --> K[INSTRUCTORS]
    H --> L[INSTRUCTORS]
    I --> M[INSTRUCTORS]
    I --> N[STUDENT MANAGERS]
  
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A Survey or Situation Analysis.—Every administrator and worker in health and physical education in colleges and universities would



¹¹ Davis, E. C. *Methods and Techniques Used in Surveying Health and Physical Education in City Schools*. Bureau of Publications, Teachers College, Columbia University, New York, 1932.

niques for surveying health and physical education in city schools which can be adapted to the college level. The first year in an institution might well be spent in making contacts with influential persons, in determining objectives and program, and in organizing working committees. A one, two, three, or a one, three, five year program should be thought through as well as possible in advance if the most is to be accomplished in the succeeding years.

State, Sectional, and National Organizations.—All college physical educators should belong to one or more of the many state, sectional, and national organizations having to do with health, physical education, athletics, and recreation. The organization for college men, formerly called the Society of Directors of Physical Education in Colleges, and now known as the College Physical Education Association, is open to all men instructors and coaches in the college field. Voting membership in the National Association of Woman Directors of Physical Education in Colleges is restricted to heads of departments but instructors may attend the meetings. Both men and women, including directors, instructors, and coaches should belong to the American Physical Education Association. Staff members should also belong to the national association representing their special interests if such an organization exists. Institutional membership should be held in the American Student Health Association and the National Collegiate Athletic Association.

National Unity.—In 1897, when the College Physical Education Association was formed, there were few organizations in the United States promoting health and physical education.¹² The American Physical Education Association and the Amateur Athletic Union appeared in the eighties and certain religious groups were concerned with the physical as well as the spiritual needs of their members. For the most part, however, workers in our field could belong to very few national organizations.

Contrast this with the situation which confronts us today. The development of the variety of services and the specialists in personnel not only led to an increase in the number and complexity of problems within departments but it also caused a "mushroom" growth of national and sectional organizations which seems to be out of all proportion to the need. It was but natural that physicians, hygiene teachers, corrective specialists, intramural directors, and coaches of football, swimming and a number of other sports, would tend to develop their own interests. Able and ambitious individuals not only built up independent departments in their own colleges but they were also in-

¹² Hughes, W. L. "Left of Center." Proceedings, The College Physical Education Association, 1934.

strumental in forming national and sectional organizations. So in physical education today there are national organizations for public schools and for colleges, for men and for women, for state and city directors, for corrective physical education and for recreation. In athletics there are organizations for directors of intercollegiate and directors of intramural athletics, for coaches of football, basketball, swimming and coaches of other sports, for college and high school athletics, for amateur and professional athletics, and even for sportsmanship in athletics and faculty representatives of athletics. In the health field are organizations for college physicians, psychiatrists, nurses, and for workers in social hygiene, safety, child health, school health, and public health.

Present National Organizations.—The partial list below shows some of the many national organizations promoting one or more phases of health, physical education, athletics, and recreation:

I. Physical Education and Recreation.

1. The College Physical Education Association.
2. The American Physical Education Association.
3. The National Association of Directors of Physical Education for College Women.
4. The Society of City Directors of Health and Physical Education.
5. The Society of State Directors of Physical and Health Education.
6. The Department of Health and Physical Education of the N. E. A.
7. The Directors of Physical Education of the Y. M. C. A.
8. The American Physiotherapy Association.
9. The National Recreation Association.
10. The National Camp Directors Association.
11. The American Academy of Physical Education.

II. Athletics.

12. The National Collegiate Athletic Association.
13. The National Federation of State High School Athletic Associations.
14. The National Amateur Athletic Federation.
15. The Women's Division of the National Amateur Athletic Federation.
16. The Intercollegiate Amateur Athletic Association of America.
17. The American Olympic Association.
18. The Sportsmanship Brotherhood.
19. The American Football Coaches Association.
20. The National Basketball Coaches Association.

III. Health.

21. The American Student Health Association.
22. The American Child Health Association.
23. The American Public Health Association.

24. The American Social Hygiene Association.
25. The National Committee on Mental Hygiene.
26. The American Tuberculosis Association.
27. The American Association of School Physicians.
28. The National Safety Council.

Why not have a national association of directors of required physical education for men and another similar organization for women? Why not organize a national association of directors of teacher training in health and physical education for men and for women? Why not have a national association of teachers of hygiene?

These associations did not grow up accidentally. On the other hand, they are the result of careful and intelligent planning. They were formed for the purpose of promoting one or more phases of health, physical education and athletics. These organizations have a certain amount of influence. Some aim to serve students, others are interested in research. All deal with the same college students. All aim, or at least should aim, to assist college students to develop all their capacities to the fullest possible extent, physical, mental, social, and emotional. Granted that these many organizations have served a useful purpose in this new and developing field, isn't it time to inquire into the need for so many at the present time? Can 25 or 30 national organizations, each promoting some small phase of that part of education primarily concerned with the physical development of students, effectively serve this purpose in small groups? Have we not become the All-American Organizers, and the All-American Joiners? Are we not somewhat like the small town business man who joins everything from the Boy Scouts to the Benevolent Order of White Mahatmas? Are we not sacrificing prestige and influence by our piecemeal procedures? We are a house divided against itself. These associations are, in a sense, competing against rather than co-operating with each other. Are not our basic problems fundamentally the same and should these not be discussed together by director, instructor, coach, physician, men and women, public school and college worker? Is it necessary to continue indefinitely with small and comparatively ineffective groups?

Under the present plan to which organizations should a progressive health and physical educator belong? What conventions should he attend? How much should he expend of his own or his institution's money in membership fees and traveling expenses? Obviously, it is not feasible for him to belong to all the national organizations operating in this field. Fees alone would amount to \$50 to \$75 annually and traveling expenses would mount into the hundreds. Three or four weeks of the year cannot be spent at national conventions by busy

men, and few have the time and energy to read even half the literature. The result is that a majority of our people attend the meetings of the group of their special interest and miss the stimulating and broadening influence of the discussions in other fields. For example, only about 10 per cent of the members of the College Physical Education Association are active in the American Physical Education Association and attend the annual convention in April. Only a little over 20 per cent of this group are coaching the so-called major sports and a very small per cent of the members of the football and basketball coaches' associations belong to physical education associations and attend meetings.

A National Health and Physical Education Association.—Is it not time to cease “hanging separately” and begin “hanging together”? Why not merge some or all of these groups promoting some phase of health, recreation, athletics, physical education, and organize a *National Health and Physical Education Association*? Perhaps it should be affiliated with the National Education Association. One constitution, one set of officers, one fee, one publication, one convention and one profession instead of several professions, would serve all. An annual convention of four or five days, held perhaps during the Christmas holidays, might be composed of general and sectional meetings. The former should be planned to interest director, coach, physician, and instructor alike. Present independent organizations should constitute the sections of the parent body and section meetings should be technical in nature. The American Association for the Advancement of Science is an example of what can be done in merging special groups. In this great organization specialists in the various sciences have combined their efforts in a common cause. It is true, at present, that a few organizations including our own, are affiliated with the American Physical Education Association. This affiliation, however, exists mainly on paper and in reality does not function effectively.

What a tremendous influence in these United States such an organization would have. In the past our attempts at “selling our product” have been rather feeble and ineffective. The public generally and many of our school and college administrators and faculty do not understand clearly the work we are trying to do. But one national organization promoting health and physical education, including athletics in all forms, would be a power in education. School boards, college trustees, taxpayer, legislators could not ignore us if we joined forces in a common cause.

The plan may appear idealistic, and even fantastic at first thought. But if we accept it in principle the administrative details can be worked out in the years to come. Of course tradition, vested inter-

ests, entrenched prejudices would make it difficult to scrap present officers, and committees, and constitutions. We advocate team play and cooperation in our games and talk glibly about how our activities tend to develop democratic qualities of citizenship yet in promoting our programs, in organization and administration, we have exhibited a rather narrow type of "rugged individualism." We labor along in our own small and comparatively ineffective group each of us too well satisfied to give all of his thought to his own specialty. Why all this division into groups? If we really believe and practice what we preach we should be the greatest cooperators in education or any profession. Why not try team play in promoting a national program? A first step toward cooperation was made in 1934 with the joint program of the College Physical Education, The National Collegiate Athletic Association, The American Student Health Association, and The American Football Coaches' Association.

There has been a move within some institutions to combine into larger divisions those departments whose functions are closely related. This movement should be extended to our national organizations. Coordination, combination, and cooperation should replace competition and division in solving our problems of physical education requirements, curriculum, credit, athletics, health, and recreation to the end that our profession may take its rightful place of importance in society and to the end that the youth in our colleges and universities may be better served.

Summary.—The organization of health and physical education in colleges and universities has become the increasing concern of administrators in this field. There appears to be a tendency to combine the various services offered the students into one department in charge of a director or dean who is an educator-administrator with advanced training in health education and physical education. Specialists, such as physicians; coaches; instructors in swimming, tumbling, or dancing; nurses; and experts in correctives, who are free to render skilled service should be provided, but the various units, like the many governmental executive agencies, should be tied together in a functioning whole. The organization requires well trained staff members, including an educator-physician who can teach as well as treat students, and a coach who has interest in and training for work in required, intramural, or health activities as well as in his specialty.

There are undoubtedly forces at work in the college to create a more wholesome balance and relationship between health education and physical education, between health service and health instruction, between athletics and required physical education, etc. Health service and intercollegiate athletics are well established but their great

educational possibilities have never been realized. Health supervision, hygiene teaching, intramural athletics, and required physical education are gradually assuming their rightful places in the program. The physician, the hygiene teacher, the physical educator, including the athletic coach must join in a united effort to reorganize health and physical education in the interest of better service to the students.

Standards and Policies.—The following statements suggest standards and policies in the organization of health and physical education in colleges and universities:

The administration of health and physical education, including athletics, is the responsibility of the institution and should be under its complete control.

All health and physical education, including athletics, of a college or university should be organized in one department or administrative division.

The director or dean of the department of health and physical education should be directly responsible to the president and trustees of the institution.

The director or dean of the department of health and physical education should be trained as an educator, should be an expert in at least one phase of the program, and should possess administrative ability.

Health education should be organized to include three phases: (a) Health Supervision or hygiene of the environment, (b) Health Service, including health examinations, follow-up health conferences, medical treatment, etc., and (c) Health Instruction or Hygiene Teaching.

A full-time physician should be employed as director of the division of health education. He should be properly licensed, and trained as an educator.

An advisory committee on health, composed of deans, personnel officer, local physician, and faculty members from departments closely related to health might well be provided.

Physical education should be organized to include: (a) Required, (b) Intramural, and (c) Intercollegiate activities. Professional courses, if offered, should also be included.

The director of physical education, including athletics, should be an educator with advanced training in physical education.

Intramural sports should be organized and administered as a phase of physical education.

Intercollegiate athletics should be recognized as possessing great educational possibilities, if properly conducted, and therefore should

be organized and administered as a part of a broad program of physical education.

An advisory committee on athletics and physical education might well be appointed by the president to act in an advisory capacity in shaping important policies of the department. A majority of the committee should be faculty members, but students and alumni should be represented.

Intradivision cooperation in health and physical education should be promoted by meetings of the entire staff, by conferences, etc.

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CHAPTER III

HEALTH SUPERVISION OF THE STUDENT ENVIRONMENT

Present Status.—The most casual survey of the health supervision of the student environment in colleges and universities reveals the fact that this phase of the program needs organization and careful direction. It cannot be expected to “run itself” with responsibility divided among such officials as the superintendent of buildings and grounds, sanitarian, dean, sanitary engineer, engineer, janitor, nurse, physician, director of physical education and director of health service. In most institutions the service is meager, in many none exists. One great state university has an Office of Dean of Students which gives some attention to the health supervision of the students’ environment. Another has control of this service centered in a Division of Operation and Maintenance, while still another has a Housing Bureau. A large private institution has a University Council on Welfare and Student Activities with a sub-committee on housing, another has a full-time sanitarian, and a third has the deans, sanitary engineer, department of buildings and grounds, engineering department, and health service each responsible for some phase of this work. A small privately endowed college considers this phase of the health program the responsibility of the Student Health Service Department, while two others place it under the supervision of the director of physical education.

Control of Health Supervision.—It seems logical that the health supervision of the student environment should be exercised by the director of health education in cooperation with local physicians, the superintendent of buildings and grounds, deans, sanitary engineers, the engineering department, physical educators, nurses, janitors, proprietors of rooming houses and eating places, and perhaps voluntary health officers in the various buildings. The director of health and physical education, if he is a physician, or the physician in charge of the health education division of the department, is usually the best qualified person on a college campus to do this work.

Advisory Committee.—There is considerable difference of opinion regarding the worth of an advisory committee on health. Some physicians believe that “too many cooks spoil the broth.” If such a

committee were formed it should not be used as a substitute for a competent director who is not afraid to accept responsibility. It is important that such a committee be restricted to individuals, who are qualified, because of special training and experience to pass intelligently upon matters pertaining to health. There is some question as to whether or not local physicians should be included on this committee unless they are in some way connected with the institution. The committee might well include deans, personnel officer, and faculty members from departments closely related to health.

Sanitary Surveys.—The director should provide frequent and irregular sanitary surveys. Ideally these inspection tours would be done by a trained sanitarian but few institutions can afford such a person. This survey should cover such items as the general environment; classroom environment; housing conditions; eating places; food, water, and milk supply; sewage and garbage disposal; and the swimming pool.


Definite regulations regarding hygiene of the environment should be made known to students through printed forms, convocation announcements, bulletin boards, regulations posted near the telephones in dormitories and rooming houses, and by group instructions to new students during Freshmen Week.

Rooming Houses.—The division of health education should compile a list of approved rooming houses and either distribute this list among the students, or keep it available in a central office where students may have access to it before rooms are selected or assigned. It is a desirable policy to prepare a form letter (page 34) to be sent to proprietors of rooming, boarding and apartment houses stating that the "approved list" is being prepared and requiring that all applications be sent in by a certain date. It is important that all householders who desire to rent rooms to students register with the institution. The deans can investigate social conditions and the division of health education can inspect the sanitary features of the house. On page 35 is shown the form which the proprietor signs in agreeing to certain University regulations. The reverse side of the same form may be used by the institution's inspector in rating the rooming house. Uniform blanks for recording housing conditions are greatly needed and should be provided.

The committee on housing at the University of Pennsylvania furnishes, free of charge, copies of a uniform approved lease (page 36) which it recommends to all proprietors.

The University of Illinois has an excellent list of sanitary features of an approved rooming house (page 38). The division of health education should establish heating, lighting, ventilating, screening,

toilet, bath, size of room, and control of communicable disease regulations and require proprietors of rooming houses to meet them in order to remain on the approved list. Certificates (page 33) may be issued by the responsible official to proprietors of rooming houses stating that the establishment has been inspected and approved officially by the institution's health authorities. Such approval should

UNIVERSITY OF PENNSYLVANIA University Council on Welfare and Student Activities <small>OFFICE OF THE SUBCOMMITTEE ON HOUSING</small> <small>GEORGE E. NITZSCHE</small> <small>CHAIRMAN</small>		
This is to Certify that	proprietor	
of a	at	
is a member of the UNIVERSITY OF PENNSYLVANIA HOUSING ASSOCIATION for the academic year 192 —192 ; and that the said establishment has been inspected and is approved officially by the University authorities.		
Witness my hand this		day of 192
		Chairman, Sub Committee on Housing

CERTIFICATE OF APPROVAL FOR ROOMING HOUSE PROPRIETORS.

be temporary in each instance and the householder should be made to understand that approval is on the basis of conditions then existing. Certificates might well be issued every semester and of such size and design that they may be placed in the windows of rooming houses.

UNIVERSITY OF PENNSYLVANIA

PHILADELPHIA

*Committee on Housing*GEORGE E. NITZSCHE, *Chairman*

3440 Walnut Street

July, 1930.

To Proprietors of Rooming, Boarding and Apartment Houses:

The University is now preparing the "Approved List" of student residences for the year 1930-1931. *Students in all departments will be permitted to live only in houses which are on the "approved list."*

Registration certificates issued at this time will be good until the Summer of 1931. All applications must be accompanied by a fee of \$2.50, which pays all charges to July, 1931. *The preliminary list will be published about the last week of August and the final list about the middle of September of 1930.* It is desirable, therefore, that all registrations be in before the end of the present term. Those who are on the printed lists have a considerable advantage.

The Housing Committee expects all proprietors to co-operate in the same splendid spirit as in past years.

The Committee makes the requirements that:

- (a) The House must be under the immediate supervision of some responsible person, who must reside on the premises.
- (b) The Houses must be clean and sanitary.
- (c) The bedclothing must be clean and changed at least once a week.
- (d) The bathing and toilet facilities must be adequate.
- (e) Accommodations are offered only to men, or only to women, and not to both men and women.
- (f) The Proprietors recognize the right of the University to inspect at any reasonable time, and to withdraw students from any house not satisfying the requirements herein specified.

A copy of the rules and regulations of the University Committee on Housing is enclosed herewith. The certificate of approval should be posted in each house. Additional copies of the Regulations may be had on request. The proprietors of all establishments on the approved list automatically become members of the *University of Pennsylvania Housing Association*. Members of this Association will have the right to bring before the representatives of the University all disputes with students concerning their conduct, and the collection of debts for room or board. They may also vote on matters affecting the welfare of the boarding, eating and rooming houses in the vicinity of the University.

The Committee will also be glad to furnish, free of charge, copies of a uniform lease which it recommends to all proprietors. Please note that to secure listing in time for the students who will enter or return next fall, you should register before the last week in July.

COMMITTEE ON HOUSING.

HEALTH SUPERVISION OF STUDENT ENVIRONMENT 35

Mr. _____ Address _____
 Name: Mrs. _____
 Miss _____ Phone _____

\$ per week single \$ per week double

Minimum Price: _____

DESCRIPTION: No. of rooms and sizes

	Large		Medium		Small	
	M	W	M	W	M	W
Single						
Double						

Furnishings _____

Cleanliness _____

Type of Heat _____

Toilet and bathing facilities _____ Condition _____

Gas _____ Electricity _____ Fire Escapes _____

Can accommodate _____ with meals

Supervised at all times? _____ Personnel of proprietor _____

Prefers _____

Inspected by _____ Date _____

Approved _____
 Not Approved } by _____ Date _____

Remarks:

In consideration of the privilege of being listed as an approved place of student residence by the University of Pennsylvania, the undersigned proprietor of the rooming house described on the reverse side of this card hereby agrees to conform to the following University requirements:

1. Leasing of rooms to students must, in every case, be consummated by the signing of a lease in triplicate; one copy for the tenant, one for the proprietor and one for the University. The University's copy must be sent immediately to Mr. Thomas B. Ryan at the Dormitory Office, 37th Street and Woodland Avenue. Lease forms will be supplied to all approved rooming houses by the University.

2. Proprietors shall communicate with the Student Health Service of the University if a student is confined to his room through illness.

3. Rooming house proprietors shall display in a conspicuous place at all times a certificate of approval from the University.

4. Properties approved by the University must be open to inspection by the University officials at all times.

5. Proprietors will transact all of their business with the University with the exception of reporting student illness, through Mr. Thomas B. Ryan (see No. 1 above). Proprietors shall immediately report to Mr. Ryan misconduct and other irregularities of student tenants.

6. All contractual arrangements with student tenants are made at the risk of the rooming house proprietor.

7. Proprietors of rooming and boarding houses who furnish meals to students are required to have all food handlers employed on the premises submit to the regular medical inspection and examination, as provided by the University Health Service.

Date.

Proprietor.

UNIVERSITY OF PENNSYLVANIA
Housing Association

WITNESS my hand and seal this day of , 19
 Sealed and delivered in
 the presence of } (Seal)
 (Seal)

UNIVERSITY OF PENNSYLVANIA

Committee on Housing

HOUSE RULES

- 1. All rentals are payable weekly in advance.
- 2. The proprietor will not be responsible for tenants' property lost, stolen, damaged or destroyed by fire. Doors should be locked when tenants leave their rooms.
- 3. The proprietor reserves the right to inspect any room at any time.
- 4. Tenants will be charged for guests who remain over night.
- 5. Tenants are responsible for damage to their rooms other than ordinary wear and tear.
- 6. Tenants are furnished keys for their rooms upon making a deposit of twenty-five cents (\$25) per key. The deposit will be refunded when the key is returned.
- 7. Tenants are requested not to use the telephone after 10.00 P. M. or before 7.30 A. M., except upon most urgent business.
- 8. Tenants are requested not to allow umbrellas to drain on the floor of their rooms.
- 9. Tenants are requested to make use of the waste-basket, ash tray, laundry bag and shoe receptacle with which the room is provided.
- 10. Tenants are requested to throw back the bedspread before using the bed.
- 11. Tenants are requested to turn out lights upon leaving the room and upon retiring.
- 12. Tenants in case of illness or accident should call the Students' Resident Physician in the Mask and Wig House, University Dormitories (Baring 0100).
- 13. Tenants are forbidden to entertain women in their rooms.
- 14. Music and loud singing is forbidden after 8.00 P. M., except on Saturday nights.
- 15. Electric attachments other than those furnished with the room are forbidden. Cooking in rooms is not permitted.
- 16. Gambling and the use or possession of intoxicating liquors are forbidden.
- 17. Dogs are not permitted in the house.
- 18. This house has been approved by the Committee on Housing of the University of Pennsylvania for the year 19 -19 , and is subject to all rules and regulations prescribed by the University.*

* Tenants should make sure that the proprietor's certificate is for the current academic year.

LEASE

BETWEEN

AND

From

To

SANITARY FEATURES OF APPROVED ROOMING HOUSES

SURROUNDINGS

The yard is clean, well-kept, and free from offensive slops, heaps of garbage, or ashes.

THE HOUSE

The basement is clean, dry, and free from odors.

The halls and stairways are lighted and well-kept.

Adequate *protection* is provided for all roomers to escape in case of fire.

HEAT

All study rooms are heated at an even temperature of 68° to 70° F. when occupied. The system of heating is *hot water, steam, or hot air*.

VENTILATION

Each room has at least one *window* opening to the outside. By provision for lowering the window at the top, and by a transom or by a window ventilator, proper ventilation is obtained. Each student is allowed at least 1,000 cubic feet of air.

HUMIDITY

Hot air heating: By the use of evaporating tanks in connection with the hot air heating system and by the suspension of buckets of water beneath the registers, adequate moisture is provided to make a room comfortable at 68° Fahrenheit.

Hot water or steam heating: Where hot water or steam is used as the method of heating, humidifiers, attached to the radiators or pans of water beneath them, reduce the coal and doctors' bills by giving sufficient moisture to the air. Beauty and humidity are often combined by using potted plants and bulbs in water.

LIGHTING

The window area is at least one-fifth of the floor area. The study room has a semi-direct or totally indirect fixture with a relatively low intensity of artificial illumination. The strength of the bulbs used is determined by the size of the room, by the lightness or darkness of its decoration and furnishings, and by the distance of the light from the ceiling. A local light in the form of a portable table lamp, which is so constructed as not to permit the lamp filament to be visible, is furnished each student. The wattage of the bulb is high enough to prevent eye strain but not so high that it causes glare.

CLEANLINESS

1. *The rooms* are cared for daily and thoroughly cleaned at least once a week. Mattresses are aired and sunned weekly. The bed clothing is clean, and a fresh sheet is supplied each week.

2. *The bath room* is on the same floor with the bedrooms and has outside ventilation. One bath room is provided for each five roomers. The plumbing is modern and in good repair. All fixtures and equipment are clean and neatly arranged.

3. *Bathing*. Hot water is furnished the lavatory daily and for baths at least twice a week. Each student is supplied with a separate towel.

4. *The drinking water* is from the city supply and each roomer is provided with his own glass.

FURNITURE

No room is equipped for more than *two* roomers. Each student has a single bed. Where two beds are in the same room they are at least six feet apart. Each room for two students is furnished with study tables, two straight, and two easy chairs, a dresser or chiffonier or both, a closet or wardrobe, a mirror, rugs, a bookshelf, wastepaper baskets, and a room thermometer.

Not all college and university officials are agreed that students should be *required* to room in houses which are on the approved list. Some doubt authority for such action. Others believe the ideal and the practical economic solution are at variance. One great state university has had some difficulty in enforcing the rule, but after several years of persistent effort the situation seems to be under satisfactory control. Pennsylvania requires students to live in the university dormitories, fraternities, or in houses approved and registered by the university.

Rules and Regulations Governing Rooming Houses.—A study of the rules and regulations governing rooming houses shows rather vague and general statements regarding sanitation and other health measures in many institutions. In some instances the rule states that "The house must be clean and sanitary," or "the bathing and toilet facilities must be adequate."

The form on page 40 presents more specific regulations governing heat, light, cleanliness, bathing facilities, etc. Apparently very little has been done in the colleges and universities in developing standards governing the living conditions of students. Perhaps it has not been considered of sufficient importance to command the respect of college and university officials. Sundwall¹ has proposed an excellent list of such regulations. Realizing the need for standards in this field the writer made a study² to determine and evaluate standards and policies regarding health supervision of the student environment. This study provides a means whereby directors of health education may make a planned and intelligent improvement in their programs by using the proposed standards as guides.

Heating.—It is desirable to heat study rooms by hot water, steam, or hot air rather than by gas. Where gas stoves are used all connections should be metal and the fumes should be carried from the room by pipe or chimney. The New York Commission on Ventilation found by experimentation that an even temperature of from 68° F. to 70° F.³ should be provided for students' rooms while occupied for study. In order to assist in meeting this standard it is recommended that a thermometer of a grade that will give a reading accurate to 1° F. be placed in the room of every student.

¹ Sundwall, John. "Student Health." Chapter XVIII, in R. A. Kent's *Higher Education in America*. Ginn & Company, Boston, 1930.

² Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, 1932, Ch. III, Section II, p. 18.

³ *The New York Commission on Ventilation. School Ventilation—Principles and Practices*. Bureau of Publications, Teachers College, Columbia University, 1931.

UNIVERSITY OF MINNESOTA

Rooming House Regulations for Householders and Students

1. *Heat.* All rooms should be heated to an even temperature of 70 degrees when occupied.
 2. *Light.* No light stronger than 50 watt required. No electric appliances are to be used, except by arrangement with the householder.
 3. *Cleanliness.* Rooms should be cared for daily, and thoroughly cared for once a week. Bath rooms should be cleaned daily.
 4. *Equipment.* The following equipment is recommended: Single beds, two study tables, two chairs, two easy chairs, two dressers, rugs, thermometer, waste paper baskets.
 5. *Bathing Facilities.* Hot water should be furnished daily by 7:00 a.m.
 6. *Inspection.* All student rooming houses should be open to the University Health Service, and the Director of the Housing Bureau, for inspection. Householders must report to the University Health Service any student or employee having or suspected of having any communicable disease (such as chronic cough) and they must report all illnesses which confine students to their rooms.
 7. *Living Room Privileges.* Students should have a reasonable use of the living room.
 8. *Home Surroundings.* All householders are urged to accept the care of students as a trust, in that many students are young and away from home influences, so that for the time being, the householder takes the place of parents and so should be concerned for the physical and moral well being of the student.
 9. *Quiet* after 8:00 p.m. excepting Friday and Saturday nights.
 10. It is understood that those keeping men students do not keep women students or business women as roomers.
 11. Student is responsible for unnecessary breakage or damage in room. Keys may be furnished by householder upon request of student and a deposit of 25 cents.
 12. Each student and householder is requested to sign a contract furnished by the University.
- Note.* If either student or householder fails to live up to these regulations, the other has recourse to the Office of Dean of Student Affairs.

*Note Carefully the Following Regulations Which Have Been Approved
by the Board of Regents*

1. It is understood that a room is engaged for a complete quarter, unless otherwise arranged with the householder. If, however, a student withdraws from the University, such student is released from financial obligations.
2. It is understood that a room is automatically released at the conclusion of each quarter, but 10 days' notice must be given.
3. A deposit of \$5.00 is to be made to the householder when a room is engaged.
4. It is advisable to make separate arrangements for board and room.
5. Students are advised—when possible—to board where they room.
6. No rebate in room rent is allowed for absence.
7. Rebate in charges for board is made only if absence exceeds a week, or if arrangements have been made in advance with the householder. This rule applies to absence during vacations as well as to all other absences.
8. A special charge is made for meals served to guests or for extra service to guests.

Humidity.—Water vapor should be supplied by evaporation tanks or humidifiers with steam and hot water heating systems and particularly where hot air furnaces are used. A feeling of comfort shortly after entering a room is a fair guide with reference to temperature but not with reference to humidity. After occupying a room for some time a student ordinarily will not notice faulty adjustment of temperature, humidity, and air velocity.

Ventilation.—Although the New York Commission⁴ proposes 2 cubic feet of air per minute per square foot of floor area it does not seem advisable to state ventilation standards in such dogmatic terms. Size of room, temperature, humidity, ceiling height, and number of persons occupying a room all affect the standard. Under average conditions the minimum should be approximately from 1000 to 1800 cubic feet per person per hour. Amount of exposure, window space, and heating arrangements must be taken into consideration. Certainly all rooms, if possible, should be provided with direct outside air, window ventilation, transom windows, and cross ventilation.

Lighting.—Since students' eyes are constantly under strain because of the nature of their work, adequate, properly shaded lights are highly important in all student living quarters. Direct outside light is essential. While the amount of window area in proportion to the floor area will vary with the space to be lighted, finish and color of the walls, arrangement of the windows, and the width of the rooms, the standard usually proposed is 20 per cent of window area to floor area.

Each study room should contain a shaded electric light which is arranged to come over the shoulder of the student while working at the desk. According to a United States Public Health Report⁵ the intensity of artificial illumination on desks should be at least 5 foot candles with 8 foot candles recommended. A 40 watt, frosted globe, Tungsten filament seems to be most satisfactory for desk lamps.

Cleaning.—Study rooms should be cared for daily and thoroughly cleaned at least weekly. At this time mattresses should be well aired and clean bed linen, sheets, and pillow cases should be provided. The fraternity man, who used the same bed linen for an entire term or changed it only after a visit to his home, was one example of the almost total disregard of health education of college students in earlier years.

Bath and Toilet.—A bathroom for every six or seven students

⁴ *Ibid.*, p. 64.

⁵ United States Public Health Report. "Review of the Current Practice of the Lighting of School Buildings in the United States." United States Government Printing Office, Washington, D. C., December 14, 1928, pp. 3313-3318.

should be considered the minimum. It is desirable to have bathrooms located on the same floor as the bedrooms. Cross ventilation is essential. Hot water should be supplied in student rooming houses at all times and three or four clean towels per week should be provided. It is important as a part of the students' health education that adequate bath and toilet facilities be provided to encourage right habits in connection with personal cleanliness and regular elimination.

Furnishings.—It is desirable to provide single rooms, and in all cases single beds, since it is almost impossible to protect students who are living under crowded conditions from epidemics, especially respiratory infections. Where two or more beds are located in the same room a minimum of six feet is needed between beds. If sufficient space is not available students may sleep with feet opposed. Modern dormitories, however, provide more space than the minimum proposed above.

Students should not be permitted to room in basements or on third floor rooms where no fire escapes are provided. Residence halls and approved off-campus houses should be safe, and should be fire-proof where possible.

Eating Places.—The dietary policies of the institutions should be formulated and carried out under the supervision of the director of health education. This work may be under direct charge of persons trained in dietetics. The department of Home Economics may carry out the policies but in the interests of a unified health program this important health work should be supervised by the division of health education. College eating places should be models of efficiency and cleanliness. All rooms where food is stored, prepared, or served to students should be kept thoroughly clean and screened against insects. No privy vaults, open cesspools or animal pens should be permitted in the vicinity. Regulations should be drawn up by the responsible persons requiring certain sanitary standards governing the cleaning of dishes, and cooking utensils. Unquestionably all food handlers, whether they prepare or serve food, should be required to secure a certificate of health and they should be examined frequently and without warning. The division of health education should cooperate with the local board of health in this important matter.

The examination of domestic servants is a more delicate matter but it is the responsibility of the institution and the local board of health if they are permitted to handle food served to students.

Inspections.—The institution is fortunate indeed which has a full time sanitarian to inspect food supplies, food handlers, and premises irregularly and frequently. Inspections are necessary to detect typhoid carriers among handlers of student food. Only approved

dairies should furnish milk served to students,—their employees should provide health certificates, and the whole plant should be under routine inspection and comply with United States Public Health regulations. Bacteriological examinations should be made regularly of samples of milk ordinarily consumed by students. The sanitarian at Yale gathers and tests samples of milk in all places serving students, especially on days when the board of health report indicates a need of such testing. Dairies cannot afford to grow careless if they know tests are being made frequently.

The bulletin of the department of university health explains the sanitary supervision at Yale: "Conditions throughout the University with regard to housing, ventilation, heating, lighting, etc., are looked after by a sanitary inspector on the staff of the Department of University Health. This inspector visits the dining hall regularly and notes the condition of the plant as to its sanitation, and the quality of food supplies. A similar service is offered to the restaurants and eating places patronized by students, and some of those engaged in this business have gladly availed themselves of this service. The quality of the milk supply is determined by the laboratory reports of the New Haven city health department.

"All persons handling food in the University dining hall are required to undergo a medical examination to see that they are not

OBERLIN COLLEGE STUDENT HEALTH SERVICE

SANITARY INSPECTION

Address _____ Person in Charge _____ Date _____

GENERAL APPEARANCE, LIGHT, VENTILATION	
COUNTERS	
FLOORS	
DISHES & UTENSILS, CLEANSING	
TOWELS	
REFRIGERATOR & ICE	
FOODS EXPOSED & MILK HANDLING	
PERSONNEL IN GOOD HEALTH	
GARBAGE DISPOSAL	
CELLAR	
BUILDING	
PLUMBING	
PERSONNEL CLEAN	
WATER SUPPLY (LAB. REPORT)	
TOILETS OR PRIVIES (CONDITION)	

CODE—E EXCELLENT. G GOOD. F FAIR. B BAD.

suffering from any communicable disease, and that they are not 'carriers' of any of the group of intestinal diseases which are sometimes transmitted by those who, while not actually sick themselves, harbor and excrete the germs causing these diseases.

"The sanitation of the Carnegie swimming pool is under close supervision. Tests of the water in the pool are made daily by the sanitary inspector and his assistant. . . .

"Regular inspections are made of all University buildings. Close cooperation is maintained with the janitor service, special attention being paid to airing the recitation and lecture rooms and maintaining proper temperature therein. Special attention is also given to the lighting of the rooms used by students."⁶

Waste Disposal.—It has been found desirable to have all garbage, ashes, and trash removed by a unified system of control, that is, by a contractor under the control of the health authorities of the institution. Garbage around eating houses where food is served to students should be placed in covered, sanitary receptacles, which protect against animals. These should be emptied and washed daily.

The sanitary inspection form page 43 includes such items as general appearance, light, ventilation, counters, floors, dishes and utensils, towels, refrigerator, exposed foods, handling of milk, health of personnel, garbage disposal, etc. A list of boarding houses approved by the institution, and rated as indicated at the bottom of the form, should be kept on file in the office of the director of health education.

Classrooms.—The director of health education will undoubtedly find it difficult to meet satisfactory health standards in the classrooms of old buildings. As far as possible, however, he should meet the modern requirements.

Lighting.—Unilateral lighting is recommended. Cross lighting is to be avoided. According to the United States Public Health Report⁷ the glass area of the windows of a classroom should be equal to one-fifth to one-fourth the floor area, determined by latitude, and by the presence or absence of light obstructions. Translucent, adjustable shades should be hung to roll from the middle of the window, up and down. The upper part of the window gives the best illumination to the far side of the room, and the lower part best lights the nearer side of the room. The color of shades, bisque or light sage preferred, should harmonize with the color of the walls.

Cleaning.—Reeves⁸ has determined standards for janitor service

⁶ Department of University Health. Yale University, New Haven, 1931, p. 20.

⁷ United States Public Health Report. Op. cit., p. 4.

⁸ Reeves, C. E. An Analysis of Janitor Service in Elementary Schools. Bureau of Publications, Teachers College, Columbia University, New York, 1925.

which may well be applied to college classrooms. Floors should be swept or vacuum cleaned, and furnishings dusted daily. Unoled floors should be mopped or scrubbed with scrubbing machines, or vacuum cleaned two or more times weekly. Untreated floors should be mopped or scrubbed, and, where a floor brush is used, should be oiled at least three times per year. Floors may be waxed to reduce dust. If so they should be scrubbed or mopped with an oiled or waxed brush once each semester. Furnishings, ceilings, picture frames, walls, window shades, etc., may well be dusted during vacation periods by vacuum cleaner or brush with an extension handle. Manufactured soft cord dusters, with handle, cheese cloth, or cotton flannel cloth are recommended for dusting. Dusters treated with furniture polish or kerosene secure best results, if time is allowed for considerable evaporation, although an increased fire hazard is involved in oiled mops and dusters.

Ventilation and Heat.—Classroom temperatures, like study room temperatures, should be kept within the range of 68° F. to 70° F. with moderate air movement.⁹ The number of students in a classroom should be determined to some extent at least by the standard which provides a minimum of 15 square feet of floor space and 200 cubic feet of air space per student. The heating and ventilating should be capable of avoiding unpleasant odors, chilling drafts, or an increase in room temperature above 68° F. to 70° F. This may be accomplished by mechanical means or by window-gravity method in rooms with 100 occupants or less. The schedule proposed by the Commission for heating buildings during cold weather follows:

Corridors, gymnasiums, and shops.....	65° F.
Swimming pools, and adjacent dressing rooms	75° F.
All other occupied rooms	68° F.

Sources of direct radiation in classrooms should be so adjusted as to prevent overheating of students in seats adjacent thereto. A thermometer of a grade that will give an accurate reading to within 1° F. should be placed in all rooms used for instruction, study, assembly, or recreation and so located to give a representative reading of the temperature at the breathing plane of the students. A few inches up or down will make considerable difference, especially if the circulation is poor or the thermometer is placed on an outside wall. McClure¹⁰ states that the humidity of classrooms should approximate 35 to 60 per cent saturation under the proper room temperature (68° F.

⁹ New York Commission on Ventilation. Op. cit., p. 65.

¹⁰ McClure, J. R. The Ventilation of School Buildings. Bureau of Publications, Teachers College, Columbia University, New York, 1924.

to 70° F.). It is believed ¹¹ that special control of humidity is not essential except perhaps in certain northern regions where humidity is exceedingly low in cold weather. It is very difficult to keep the humidity at 30 per cent in very cold weather, because of the rapid condensation on cold window panes and outside walls especially on the windward side.

Safety.—Fire alarms, centrally located and in hearing distance of every room, fire hose, and water supply should be provided so they are easily accessible in case of emergency. Furthermore, this equipment should be tested frequently.

Drinking Fountains.—Thomas ¹² has established standards for plumbing equipment. The type of drinking fountains recommended are those in which the lips of the user cannot come in contact with the orifice from which the water issues. The stream of water should issue from the jet placed at the side of the bowl at an upward angle of 45 degrees. In this type of fountain the water reaches its highest point near the center of the bowl. Water which touches the lips of a drinker does not flow or fall on the orifice from which the water issues or mix with fresh water from the fountain. Bowls of vitreous china are recommended and so constructed as to protect the jet from the hands as well as the lips. A few tests of the water issuing from an old type fountain convinced the health authorities of one large university of the need for more modern equipment. At least one fountain should be provided on each floor of all buildings. In no case should they be placed in toilet rooms or attached to lavatory faucets.

Toilets.—Toilet rooms, with a maximum of sunlight and ventilation, should be provided on each floor of all buildings. Floors of ceramic tile or other non-absorbent material in waterproof cement, and wainscoting of white tile, opaque glass, or other non-absorbent material are recommended. Scrubbing or flushing daily with hot water by means of a hose is then possible. The cleansing agent for toilets of some approved disinfectant is desirable. Deodorants should not be used as this practice is merely an attempt to cover up evidence of the need of cleanliness.

An excellent list of rules governing janitor service and one of the best materials to come to the attention of the writer on the hygiene and sanitation of college buildings was found at Ohio State University.¹³ Instructions to the superintendent of janitors, head jani-

¹¹ The New York Commission on Ventilation. Op. cit., pp. 65-66.

¹² Thomas, M. W. Public School Plumbing Equipment. Bureau of Publications, Teachers College, Columbia University, New York, 1928.

¹³ "Rules Governing Janitor Service." Division of Operation and Maintenance, Ohio State University, Columbus, Ohio, 1931.

tors, district janitors, floor waxers, orderlies, elevator men, and matrons are omitted. However, the rules governing janitors and janitresses are listed below. Most of them have to do with health supervision of the student environment.

A. Janitors will be responsible for keeping their buildings in clean presentable condition and for the performance of such duties as are ordinarily assigned to janitors which duties are more particularly described as follows:

1. Janitors shall keep each room in their buildings clean.
2. In the winter time the janitors shall clean the snow and ice from the steps and immediate approaches to the various entrances of the buildings. This work shall be completed not later than 8 a.m. Where ice cannot be removed or a slippery condition exists, sand provided for this purpose shall be sprinkled on the steps and approaches. Under the above conditions all janitors are equally responsible for this work.
3. At all times of the year they shall see that the steps, porches and immediate approaches to their buildings are clean. All cigarette stubs and other refuse common to these locations shall be gathered together and totally removed at the end of each class period. All floors shall be kept free from cigar stubs, cigarette stubs, matches and other refuse.
4. The windows shall be kept as clean as possible under the weather conditions. Special orders shall be issued from time to time from the Superintendent of Janitors covering this matter.
5. All halls and stairways shall be thoroughly mopped at least once each week or more often if needed or directed, using a "germicide" solution which shall be provided.
6. All classroom floors shall be thoroughly mopped when necessary using a germicidal solution. Mop water shall be changed sufficiently often to prevent streaking.
7. All doors, baseboards, and wood trim in halls and rooms shall be washed whenever needed.
8. Each floor shall be swept daily or oftener if necessary. All floors except those that have been waxed, shall be sprinkled with an approved no-dust preparation which shall be provided.
9. After sweeping, all chairs, furniture, woodwork, and radiators shall be carefully dusted with a special oil duster.
10. The tablet arms of classroom chairs shall be washed thoroughly when necessary using a germicidal solution in the water.
11. All lavatories, water closets, bowls and urinals, shall be thoroughly cleaned each day or more often if necessary, with a germicidal solution. All water closet partitions shall be thoroughly cleaned when necessary.
12. All offices shall be thoroughly cleaned each day, floors mopped, and the windows cleaned as often as is necessary.

13. If the outside temperature will permit, during the heating season, janitors shall, on coming on duty in the morning, open the outside doors and enough windows in classrooms to cause a complete circulation of fresh air through the building. This shall not be construed to mean office doors and windows. The above performance shall be repeated at 12 o'clock noon.
14. During the winter season janitors will be expected to observe the thermometers in the rooms at various times during the day and shall keep the temperature at or near 70° as is possible.
15. All janitors shall keep the raised portions of the bronze sign on the front of their buildings brightly polished, being careful to keep the cleaning substance away from the brick work.
16. Each janitor shall carefully drain all the acids from the jars before emptying the contents in the containers provided.
17. Janitors shall not burn waste paper, boxes, or other refuse in or about the buildings but shall deposit the same daily in the containers provided for that purpose. The refuse shall be collected each morning. Each janitor shall keep his building clean of boxes, broken furniture, waste paper and other things of this nature.
18. All janitors shall place their keys in the key box before leaving the buildings.
19. All requests for supplies shall be approved by the Superintendent of Janitors before presentation to the store keeper.
20. All blackboards and erasers shall be cleaned once a day. Janitors shall not beat erasers on any part of building walls.
21. Janitors shall give attention to window shades and prevent them as far as possible from flapping in the wind.
22. All door knobs, hand rails and banisters shall be washed whenever necessary.
23. Janitors shall be sure before leaving the building that all windows are closed and locked. They shall also be sure before leaving the building on Saturday or during extremely cold periods throughout the heating season that all radiators are turned on.
24. All necessary repairs shall be reported to the Superintendent of Janitors or a District Janitor except in case of an emergency, when they shall be reported directly to the office of the Superintendent of Buildings and Grounds.
25. It shall be the duty of the janitors to replace all burned out or missing lamp bulbs, returning as far as possible one old bulb for each new one needed. These bulbs shall be obtained from the chief electrician on order of the Superintendent of Buildings and Grounds between the hours of 11 and 11:30 a.m. or 3:30 and 4 p.m.
26. Janitors' uniforms shall be laundered by the University at regular times. The collection of the dirty uniforms and the distribu-

- tion of the clean ones will be handled as designated by the Superintendent of Janitors.
27. In hot dry weather the janitors shall sprinkle the shrubbery about the buildings as instructed.
 28. When any repair work is being done in the building, janitors shall remove dirt caused by the work. They shall inform the Head Janitor or a District Janitor in case any new or old material is left after the work is completed.
 29. Janitors at all times shall be on the watch for leaking pipes, fires or any other emergency which might cause damage to the building.
 30. Janitors shall also perform any other duties which may be assigned from time to time by the Superintendent of Janitors.
 31. Should the head of any department request a janitor to do a small task that can be accomplished without leaving the building and does not interfere with the regular work, the service shall be courteously and cheerfully performed. In case the request involves the loss of considerable time from regular duties the janitor shall courteously inform the one requesting the service that the matter must be taken up with the Superintendent of Janitors.
 32. Any books, articles of wearing apparel or other personal belongings found by the janitor while on the University Campus shall be turned in to the Lost and Found Department, at the office of the Superintendent of Buildings and Grounds.

The Protection of Student Health.—The division of health education should be prepared to recommend to administrative officials including the deans of men and of women, a daily life for students which is conducive to the development and maintenance of desirable health habits and attitudes. Daily schedules of students should be such as to establish a regular program of work, sufficient time for meals, sleep and rest, and for exercise and recreation. A committee of the National Conference on College Hygiene¹⁴ recommends that scholastic work be confined to approximately eight hours per day, or 40 hours per week, thus leaving sufficient time for extra-curricular interests. The whole question of social health, the protection of students who carry outside work, and the over-emphasis of group competition in athletic, academic, and social achievement needs careful study. Recognizing the need for better correlation between the health service and the deans' offices the committee mentioned above suggested that the American Student Health Association, the National Asso-

¹⁴ Subcommittee on "Health in Relation to Extra-Curricular Activities." National Conference on College Hygiene, Proceedings, 1931. Published by the National Tuberculosis Association, 450 Seventh Avenue, New York City.

ciation of Deans of Women, and the National Association of Deans of Men might be interested in undertaking a study to discover common problems and possibilities of cooperating.

Standards.—The following standards are suggested as guides in the supervision of the student environment.

Control over the hygiene of the environment should be exercised by the director of health education in cooperation with the local board of health.

The division of health education should cooperate with the superintendent of buildings and grounds, the deans, the department of sanitary engineers, etc., in maintaining sanitary conditions.

There should be a frequent and irregular sanitary survey.

The institution should set up definite regulations on campus sanitation and inform the students of them.

An approved list of rooming houses should be compiled and distributed to students.

Householders who wish to rent rooms to students should register with the institution, and if facilities are satisfactory, should be placed on the approved list.

Rooming houses, to be approved, should meet heating, lighting, ventilating, screening, toilet, bath, size of room, and communicable disease requirements of the department.

Certificates should be issued proprietors of approved rooming houses.

It is important that students room in houses on the approved list.

Blanks for recording housing conditions are recommended.

Study rooms should be kept at an even temperature of from 68° to 70° F.

A thermometer of a grade that will give a reading accurate to 1° F. should be provided in the room of every student.

Humidity, ventilation, and heating standards of rooming houses should comply with the recommendations of the New York Commission on Ventilation.

Study rooms and bed linen should be thoroughly cleaned at least once each week.

Plumbing fixtures should be kept in repair and hot water should be supplied at all times in students' rooms.

Single beds for students are recommended. There should be at least 6 feet distance between beds where two or more are placed in one room.

Fire exits should be easily accessible from students' rooms on the second floor and above.

All places where food is stored, prepared, or served to students should be kept thoroughly cleaned, screened against insects and animals, and far removed from privy vaults and open cesspools.

Water used for drinking, cooking, or washing dishes should come from approved sources.

All persons preparing or serving food to students should be required to obtain a certificate of health.

Dietary policies of the institutions should be formulated and carried out by the Department of Home Economics under the supervision of the division of health education.

Food supplies (especially meats), food handlers and the premises where food is served should be inspected irregularly and at least once each month. Investigation, to detect typhoid carriers by the institution or local board of health, is essential.

Dairies providing the milk furnished to students should be under routine inspections and comply with United States Public Health regulations. Employees of dairies should provide health certificates.

Bacteriological examinations of samples of milk from all dairies supplying the college community should be made regularly. Samples should be gathered and tested particularly on days when the board of health report indicates a need of such testing.

Bacteriological examination of the water supply for students should be made daily by the department of health education, or other health agency.

At eating places where food is served to students, garbage should be placed in covered sanitary receptacles and removed daily.

Humidity, ventilation and heating standards of classrooms should comply with the recommendations of the New York Commission on Ventilation.

Left hand, unilateral lighting, with the glass area of windows equal to one-fifth or one-fourth of the floor area, is recommended.

Translucent, adjustable shades of bisque or light sage color, and hung from the center of the windows, are recommended.

Classrooms should be cleaned daily. Waxing will reduce dust. Uncoiled floors require a scrubbing at least twice weekly and untreated floors need oil several times a year.

Furniture should be dusted daily and woodwork at least weekly.

Windows and blackboards will require frequent cleaning.

Drinking fountains should be the modern sanitary type so constructed that neither the lips of a drinker nor water from the lips touch the jet from which the water issues.

Drinking fountains, wash bowls, and sinks should be cleaned daily.

It is recommended that toilet and rest rooms be provided on all floors of college buildings.

Students and faculty should be encouraged to make suggestions or complaints regarding the institution's health environment.

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CHAPTER IV

HEALTH SERVICE

The Difficulties.—There seems to be some justification for the statement that health services in colleges and universities tend to overemphasize the clinical rather than the educational aspects of health. This is due in part, no doubt, to a personnel trained in medicine with little interest or understanding of the philosophy and methods of education. Moreover, the confusion which now exists in terminology tends to limit health education to formal instruction in hygiene and limits the examination of students to a *medical inspection* or a *physical* examination. *Inspection* implies a mere routine review with no attempt at education, while medical pertains mainly to interest in and treatment of diseases. *Physical* examinations and anthropometric tests, from the beginning of their use, have emphasized symmetry, size, and structure. Today we are interested in status, function, education. *Health* examination implies that the "whole student" mental, physical, social, and emotional is being considered. It includes a *medical* and a *physical* examination.

Health Service Objectives.—The objectives of this phase of health education are stated by Storey¹ as follows:

- "1. To safeguard sick students. A less common similar objective is to safeguard the faculty, other employees, and their families when they are ill.
- "2. To protect the well from the sick.
- "3. To detect and investigate the structural and functional (mental and physical) defects and deficiencies of the individual.
- "4. To secure the treatment of remediable physical and mental defects.
- "5. To discover illogical or defective health attitudes and habits, and supply appropriate scientific information and advice for their correction.

¹ Storey, T. A. *The Status of Hygiene Programs in Institutions of Higher Education in the United States*. Stanford University Press, Stanford University, California, 1927, p. 51.

- "6. To establish in the student the habit of periodic health examination and give him a training that will enable him to select his scientific health service with an experienced intelligent discrimination.
- "7. To teach hygiene by means of the pertinent scientific information and advice given the individual student concerning the nature and importance of his health needs as shown by his health examinations, consultations, and conferences."

Scope of Health Service.—The scope of health service as listed by one institution is given below.

1. To give first-aid office treatment or medical reference to any student suffering (acute) injury or illness.
2. To advise and refer to specialized care any student needing such attention (a classified list of all physicians in good standing in the city will be used for such reference of students).
3. To give advice in matters concerning personal health and hygiene.
4. To furnish medical excuses from classes.
5. To act in any advisory capacity to deans of colleges in matters concerning the physical status of student as to ability to carry class work.
6. To acquaint parents or family physician with health status of any student when deemed advisable.
7. To correlate health education with personal health advice and first medical treatment or reference.
8. To cooperate with state and city health departments in the prevention of contagious diseases in the community.
9. To cooperate with Department of Maintenance in inspection, supervision, and maintenance of general sanitation and safety throughout the University.
10. To give infirmary service in the University Hospital, to which students will be admitted free for 48 hours' observation.
11. In cases where a student states he is unable to pay beyond this time, the service will be continued by the Hospital and staff. The financial responsibility will be referred to the appropriate Dean for consideration and for his opinion as to whether the student is actually indigent.
12. Surgical or other special treatment shall be charged to students according to ordinary practices.
13. In case a student does not care to avail himself of student medical privileges, he is at perfect liberty to treat with any physician he desires.

14. By arrangement with the Physicians' Bureau, a call for medical attention at a students' home will be referred to a physician in the locality of the student requiring attention. A classified list of physicians in good standing will be in the hands of the Physicians' Bureau for inquiries as to local specialists.

Deficiencies and Defects in Health Service.—The report of the President's Committee of Fifty on College Hygiene² indicates that desirable objectives and regulations concerning student health service were not generally found in the institutions studied in 1927. The deficiencies and defects noted were:

1. Institutions with no health service or with incomplete health service.
2. Infrequency of health examination prerequisite to matriculation.
3. Apparent infrequency of vaccination and other immunity requirements.
4. Infrequency of required periodic health examination.
5. Ineffectiveness of part-time as compared with full time health service schedules.
6. Inexpert and inappropriate personnel.
7. Incomplete health examinations.
8. The hazards of speed in making health examinations.
9. Interference of clothing with the quality of the examination.
10. Mediocrity if favored student is examined by a staff member of the opposite sex.
11. Infrequency of arrangements for required follow-up conferences.
12. Infrequency of arrangements for voluntary conferences.
13. The service over-load carried by the student health service staff.

Health Examinations.—Health examinations may be given at three different periods. Some institutions apparently require all three, pre-entrance, entrance, and annual.

Pre-entrance Health Examinations.—A few privately endowed institutions require a pre-entrance examination of all students. This is in no way designed to take the place of the entrance examination made by the college. On the contrary it is supposed to supplement the later examination. The pre-entrance examination usually con-

² *Ibid.*, pp. 53-67.

sists of a history blank completely filled out and an examination by the family physician.

The values usually attributed to this examination are that it:

1. Calls to the attention of students and parents the fact that the institution is interested in the student's health.
2. Causes the student to make an inventory of his physical condition and may result in the discovery of abnormal conditions.
3. Stimulates action toward correction of defects before entering college thereby resulting in a valuable saving in time, money, and possible unwise drain on the individual's health.
4. Allows the college to refuse admission to those persons who may be a menace to the health of the student body or who are physically unfit to carry the work of the institution.

A large group of health educators believe the pre-entrance examination is not of sufficient value to justify it. It has been tried in some situations with no success. An argument advanced against this practice is that the family physician is interested in getting the student into college, and, therefore, withholds valuable information. Another disadvantage is the doubtful wisdom of having every student pay his attending physician for examining him in addition to the cost of the health fee at the institution.

There is, unquestionably, some reason to doubt the advisability of pre-entrance examinations. For those institutions which believe the advantages outweigh the disadvantages it is recommended that there be a statement by the prospective student's family physician in response to specific questions mailed to the physician by the division of health education. This statement should require a health examination with the results recorded in scientific terms to be read only by the physicians of the department. A statement to the prospective student should call attention of the aims of the college health program and request the candidate's cooperation by coming to college in as excellent health as possible.

Entrance Examinations.—Complete health examinations, not merely as protective measures, but as constructive educational procedures, are greatly needed. The entrance examination is one of the oldest features of student health work, although the purpose of the procedure and the use made of the results have enlarged considerably in recent years. An entrance health and physical examination should be a part of the routine for matriculation which should not be considered completed until the examination has been taken and passed.

OBERLIN COLLEGE HEALTH STATEMENT

This form is a part of the requirement for admission to Oberlin College. It is intended also to furnish information which will enable college authorities to assist students to maintain a high degree of efficiency by proper adjustment, as early as possible, to the mental, physical, and social activities of the college life. This blank is to be filled out by the applicant for admission to Oberlin College, and is to be mailed directly to Dr. Whitlaw R. Morrison, Director of the Men's Gymnasium, in the accompanying envelope.

NAME	Date of writing this statement
ADDRESS	Date of birth

HEALTH OF PARENTS, BROTHERS, AND SISTERS

If any not living, give ages at death and causes of death

Have any members of your family had tuberculosis? "Nervous breakdowns" or nervous disease Diabetes Gout

HAVE YOU EVER HAD ANY OF THE FOLLOWING DISEASES? State at what age.

Tuberculosis	Convulsive seizures	Toninitis	Measles
Malaria	Nervous breakdowns	Rheumatism	Mumps
Appendicitis	Migraine	Heart Trouble	Scarlet Fever
Gonorrhea	Neuralgia	St. Vitus Dance	Chicken Pox
Pleurisy	Influenza	Typhoid Fever	Diphtheria

WHAT ILLNESS OF MORE THAN ONE WEEK DURATION HAVE YOU HAD DURING THE LAST FOUR YEARS? GIVE DATES

WHAT INJURIES OR OPERATIONS HAVE YOU HAD? GIVE DATES

Does any effect of previous injury or illness persist at present? Do you have any kind of physical deformity?

IS YOUR GENERAL HEALTH GOOD?

HAVE YOU LOST WEIGHT OR STRENGTH DURING PAST YEAR? How much?

ARE YOU SUBJECT TO WORK? About what?

IS IT DIFFICULT FOR YOU TO CONCENTRATE WHEN STUDYING?

DO YOU EVER HAVE:

Dizziness	Sore throat	Boils	Loss of appetite
Shortness of breath	Frequent colds	Acne	Digestive disturbances
Palpitation	Chronic cough	Frequent headaches	Tendency to constipation

HAVE YOU EVER HAD ANY LIMITATION PLACED UPON THE AMOUNT AND CHARACTER OF YOUR EXERCISES? When? Why?

ANY TROUBLE WITH EYES? Eyes? Wear glasses? Hearing normal? Any difficulty in breathing through nose?

HOW OFTEN DO YOU CONSULT A DENTIST? Date of last visit

WHAT EXERCISE DO YOU TAKE?

Underline sports in which you are fairly proficient

Swimming	Basketball	Hockey	Archery	Football	Gymnastics
Tennis	Baseball	Golf	Soccer	Track	Other

What other recreation or hobbies do you have?

DO YOU USE TOBACCO? Number daily Cigarettes Cigars Pipes

UNDERLINE DISEASES AGAINST WHICH YOU HAVE BEEN PROTECTED BY INOCULATION, OR VACCINATION, AND GIVE DATE

Smallpox	Typhoid	Diphtheria	Others
----------	---------	------------	--------

DO YOU CONSIDER YOURSELF PHYSICALLY ABLE TO STAND THE TEST OF STRENUOUS COLLEGE WORK, INCLUDING THE REQUIREMENTS OF PHYSICAL EDUCATION?

DO YOU PLAN TO EARN A PART OF YOUR EXPENSES WHEN IN COLLEGE?

NAME AND ADDRESS OF YOUR FAMILY PHYSICIAN

OTHER IMPORTANT FACTS WHICH MAY BE STATED ON REVERSE SIDE OF THIS SHEET

I pledge myself, so long as I am a student at Oberlin College, to report immediately to the Health Service any illness I may incur.

Signed.....

IM-4-1-31

A PRE-ENTRANCE HEALTH EXAMINATION FOR COLLEGE MEN.

The candidate, her parents, or the family physician should fill out this card carefully. Return to the Board of Admission before JUNE 1.

WELLESLEY COLLEGE
PERSONAL HISTORY

Name in full		Date	19	Class
Residence:	Last Name	First Name	Middle Name	
Birthplace:	Date of birth		Age	
Nationality of parents:			years	months
Health of parents:	Grandparents:		Sisters:	
If any not living, give age and cause of death:		Brothers:		
General health: Good		Fair	Poor	
Have any members of your family had Tuberculosis?		Diabetes?		
Nervous conditions or nervous diseases?				
Give approximate age at which you had any of the diseases listed: place age at right of disease.				
Measles	Typhoid Fever	Tuberculosis	Ear trouble	St. Vitus Dance
Mumps	Diphtheria	Heart trouble	Tonsillitis	Nervous breakdown
Chickenpox	Pneumonia	Rheumatism	Enlarged glands	Convulsive seizures
Whooping cough	Influenza	Appendicitis	Thyroid disturbance	Anemia
Scarlet Fever	Pleurisy	Infantile paralysis	Treated	
Do you ever have any of the following symptoms: place check at right of symptom.				
Frequent colds	Indigestion	Jaundice	Nervousness	Ankles, any weakness
Sore throat	Constipation	Severe headache	Dizziness	Knees, any weakness
Chronic cough	Skin eruptions	Severe backache	Shortness of breath	Shoulders, any weakness
Loss of appetite	Boils	Fainting spells	Palpitation	Speech, any defects

OVER

Menses: began age	Regular	Excessive	Do you go to bed?	Miss classes?
Sleep: number of hours				
Bathing: number of warm baths, a week				
Teeth: in good condition	How often do you consult a dentist?			
Eyes: normal	Glasses, why?			
Ears: hearing normal	Deafness Cause			
Eating habits: appetite good	Regular meals Eat breakfast Special diet			
What injuries have you had?	Give dates			
Does any effect of previous injury or illness persist at present?				
What operations have you had? Give dates				
Exercise: are you accustomed to walking regularly?				
Check activities in which you have fair skill:				
Basket ball	Lacrosse	Baseball	Archery	Gymnastics
Crew	Soccer	Riding	Golf	Interpretative Dancing: clog folk
Hockey	Track	Tennis	Volleyball	Swimming
Have you ever had any limitation placed upon the amount and character of your exercise?				
If so, why:				
Do you plan to earn a part of your expenses while in college?				
Further information:				

PHYSICIAN'S CERTIFICATE

Accepted candidates who have filed this certificate and the certificate of vaccination in June are admitted to the required physical examination by the College Medical Staff in September. The College reserves the right to reject any candidate if the results of this examination, in the opinion of the Medical Staff, justify such action; or to accept the candidate only under special conditions for completing the course.

Each item must be answered in full.

General health, vitality, and endurance:

Age:	Height <small>years months</small>	Present weight	Normal weight	Family type: stocky, medium, slight
Heart:	Rate	Blood Pressure	Apex beat	Size
(Stethoscopic examination)				
Murmurs	Response to exercise			
		Hemoglobin		
Lungs:				
(Examination by both stethoscope and percussion)				
Kidneys:	Color	Specific Gravity	Reaction	Albumin
(Urinalysis)				Sugar
Glands:	Thyroid	Cervical	Axillary	Mammary
Eyes:	Any abnormality?			
Ears:	Drum-membranes	Deafness?	Right	Left
(If cerumen is present it should be removed)				
Nose:	Any abnormality?	Throat:	Condition of tonsils	
I hereby certify that I have this day examined				
		Miss	with the results indicated above.	
Date	Signed			
	Address		M.D.	

OVER

VACCINATION CERTIFICATE

All candidates must comply with the following requirement: A successful vaccination within three years of a candidate's admission to college or two unsuccessful vaccinations within the year previous.

Please fill out (a) or (b)

(a) Successful vaccination within three years:

I hereby certify that Miss

Address

was successfully vaccinated on

(b) Two unsuccessful vaccinations within a year:

I hereby certify that Miss

was vaccinated on

and on

with no results.

Signed

M. D.

Address

COLUMBIA UNIVERSITY
in the City of New York

HEALTH EXAMINATION REPORT

Directions: The candidate shall fill out Part A before he reports to his physician. Part B is to be filled out by the physician who examines the candidate. Part C is reserved for the University Medical Officer.

The examining physician should mail the report to:

DR. WILLIAM H. McCASTLINE, University Medical Officer
Columbia University, New York, N. Y.

Part A *To be filled out by the candidate*

Print name in full

☐ Columbia College.

☐ Seth Low Junior College.

Candidate for admission to

(Please put a check mark (✓) in the appropriate square.)

☐ School of Journalism.

☐ University Undergraduate Status.

Date of birth

Home address

Name and address, parent or guardian

State what illness of more than one week's duration you have had during the past two years

At what age, if ever, did you have scarlet fever diphtheria
measles mumps chickenpox infantile paralysis?.

Are you subject to headaches?

Have you had any trouble with your eyes?

Do you wear glasses? Date of last eye examination

Have you ever had any diseases of the ear?

Is your hearing normal?

Are you subject to attacks of sore throat? Colds? Coughs?

Are you subject to digestive or intestinal disturbances?

Have you ever had rheumatism?

State any nervous diseases you have had, and at what ages

Have you ever had to discontinue study for any period owing to physical or nervous disturbances?

Have you ever had any limitations placed upon the amount and character of your physical exercise? If so, why?

Are you subject to fainting spells?

Have you ever had typhoid fever? Malaria?

State any surgical operations which you have had, with dates

Have you been vaccinated against smallpox? How long ago?

Have you ever been vaccinated against typhoid fever?

Do you plan to do any work for self-support during your College course?

Do you plan to do any studying or work of any kind aside from the work required for your degree?

Any further remarks may be made below.

Signature of Applicant.....

Date.....

Part B. *To be filled out by the examining physician*

In answering questions, please use the term **NEGATIVE** where the condition is normal, rather than using a dash or leaving the space blank. This blank cannot be accepted unless the data represent the results of a thorough medical examination on the day the blank is dated and signed.

To the University Medical Officer:

I have this day given

a careful physical examination and find in health

The lungs are

There are signs of pulmonary tuberculosis

The heart is

Systolic Sitting Pulse rate Character

Blood pressure (Check position
which taken)

Standing

Diastolic

Reclining

The abdominal viscera are

Hernia

The skin is

The lymphatic glands are

The condition of the ears is

The condition of the nose and throat is

The condition of the teeth is

The condition of the nervous system is

Are there symptoms of eye-strain? Condition of eyelids Trachoma?

Are there orthopedic diseases or defects present?

The posture is

Nutrition is excellent, good, fair, poor

Are there any abnormalities from injuries?

Has the applicant ever suffered from any physical, nervous, or mental disability?

Do you consider the applicant in a state of health to stand the test of College work?

As a result of the foregoing examination or previous knowledge of the applicant's health, have you any suggestions that would help the University Medical Officer to assist the applicant to develop and to maintain a high standard of physical efficiency?

Date Signature M. D.

Address

(Please do not write below)

Part C. *Record for the University Medical Officer*

A	C 1	D	S 1
B	C 2		S 2

Remarks:

Purpose of the Examination.—The purposes of the examination of candidates for admission have been stated³ as follows:

1. To disqualify students whose health defects, physical, mental, and social, preclude them from college activity.
2. To prevent students from carrying a study load which would menace health.
3. To prevent students from entering into physical activity which would menace health.
4. To discover and arrange for appropriate treatment of students with communicable disease.
5. To discover physical defects, and arrange for their correction, thus preventing disease and future health failure.

Freshmen week is an excellent time to give the entrance examination. The appointment for the examination may well be made in advance by the registrar or other official who notifies the candidate for admission, by mail, the exact time and place to appear. This plan, however, is not always practical in the larger universities.

Deficiencies Excluding or Delaying Admission.—Certain physical or health deficiencies should exclude or delay admission to college. In general, the college or university should refuse admission to students who would be a menace to the health of the student body although each institution necessarily must decide this question on the basis of local and state legislation. Students suffering from epilepsy and mental disease are considered⁴ undesirable and a menace to themselves and to others. It is important that ways and means be promoted legally so such cases may be excluded on recommendation of the director of health education. Students with communicable diseases should be delayed admission or isolated temporarily.

The question as to the degree of defectiveness which should bar students desiring to enter college is still a debatable one. The defective individual is probably in far greater need of an education than is the normal person. Certainly no one should be deprived of an education unless his or her physical condition makes it imperative. A college or university which cannot find some way to educate a student with heart lesions, chronic nephritis, or paralysis from poliomyelitis is not meeting its responsibilities.

Students with acute gonorrhea and syphilis should be treated the same as are students with any communicable disease. They should

³ Adapted from a Report of the Proceedings of the National Conference on College Hygiene, 1931. National Tuberculosis Association, 450 Seventh Avenue, New York City.

⁴ *Ibid.*, p. 28.

be admitted under strict supervision and allowed to attend classes only if attendance does not endanger others.

Routine for the Examination.—The procedure or technique for health examination of entering students needs careful study. By study and experimentation physicians, physical educators, and others who have any part in the examination should soon develop an organization and routine best suited to a particular situation. Miller⁵ has prepared a manual for physical and medical examination procedure which contains clear and specific directions and suggestions for meticulous preparation and close supervision.

The health officials must first make a decision regarding the examining policy. One physician may conduct the entire examination of a student, with the possible exception of eyes and teeth, or a corps of specialists may be provided, each conducting only that phase of the examination in which he is a specialist. Arguments might be advanced favoring each plan. If a corps of specialists is used, some one physician, preferably the director of health education, should take into account the diagnoses of the different specialists and act as health adviser and coordinator for the students. This official should review the complete record of the student and give him an inventory of his condition. The physician should check the whole examination, sum up the advice, lay out a special program, and make an appointment (page 66) for a later report and health conference.

The army station method or unit system where students pass from one health examiner to another seems to be the best procedure for conducting entrance health examination under conditions existing in most institutions. The staff needed to complete the examination during the first week of school may be computed on the basis of time devoted to each student. A recent study⁶ revealed the fact that the time devoted to examining men students varies from eight minutes to two hours. Thirty to 40 minutes per student,⁷ including time devoted to filling out history blanks and reviewing the findings with the adviser, is approximately the time needed to do the task adequately.

Members of the physical education staff should assist with those phases of the examination which do not require medical training. Additional physicians and nurses should be secured if necessary to complete the examination before regular college instruction begins.

⁵ Miller, F. N. *A Manual for Physical and Medical Examination Procedure*. University of Oregon Press. Eugene, Oregon, 1928.

⁶ Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, 1932.

⁷ *Ibid.*, p. 38.

Each examiner, in the station plan, is assigned an alcove or station with or without a clerk. Each station is provided with all the necessary instruments and supplies, is plainly marked, and is so situated that no paths cross.

Name.....
Address.....

THE OHIO STATE UNIVERSITY
Hayes Hall
THE STUDENT MEDICAL SERVICE

Instructions to the Student Who Has an Appointment for a Periodic Health Examination at the Student Medical Service

An appointment for a health examination has been made for you at
o'clock sharp, on at the Student Medical Service,
date

Room 101, Hayes Hall, Campus.

Dr..... will conduct the examination.

These special health examinations are given only by appointment, consequently it is important for every student to be at the Medical Service promptly at the hour stated. It will be absolutely necessary for the student to cooperate by carefully complying with the following instructions:

1. Fill out accurately and completely the history form enclosed.
2. *Four days before the date of your appointment*, collect in a clean bottle a specimen of urine passed just before retiring for the night. Write your name clearly on label you have pasted on bottle.
3. On the following day bring the specimen of urine and the filled out history form to the Medical Service, reporting directly to Secretary at Student Medical Service for delivery of specimen and confirmation of appointment for your Periodic Examination.

MAILED TO STUDENT.....19....

..... M. D.
Director, S. M. S.
(Made in duplicate, one copy for file)

AN APPOINTMENT FORM FOR A PERIODIC HEALTH EXAMINATION.

It is recommended that a "standardized examination" for the determination of what constitutes abnormality in tonsils, etc., should be set up as a basis for diagnosis and classification. Clinical sessions of the examiners might well be held before the work of examining begins in order that examiners agree on their classification of health defects. A sub-committee of the National Conference on College Hygiene^s considered such clinical questions as disposition of students with impaired hearing, administration of therapeutic measures, methods of detecting visual defects in routine examinations, routine Wassermann tests, care of students with glycosuria, or albuminuria, etc.

^s National Conference on College Hygiene. Op. cit., p. 30.

The station method of examination makes possible the assignment of the proper academic and physical activity load before classes begin in the fall. The older plan of examining freshmen throughout the year is full of dangers for individuals with serious defects. This plan has largely been superseded by the follow-up health conferences which are discussed below.

If the great educational possibilities of the health examination are to be realized it is important that examiners secure the confidence and cooperation of the students and attempt to some extent to interpret the educational aspects of the examination for the student. This personal health advice is a desirable prelude to the important follow-up conferences to be scheduled for a later date.

Annual Examinations.—There is some question as to the real need and value of a complete annual health examination. Study is needed to determine the value of an annual examination as compared with an entrance examination which is supplemented each year with a follow-up health conference. The form on page 93 is used for giving an examination in the junior year in lieu of the annual examination.

Other Health Examinations.—The division of health education should be responsible for the health examination of all athletes. All students who desire to participate in athletics should be required to pass a health examination satisfactorily before going into active training each season. Entrance examinations, which are sufficiently complete, permit participation by freshmen in fall athletics without further examining. Some members of the staff should pass upon all applicants for athletic teams and be present at intercollegiate contests where the services of a trained medical man are likely to be needed.

A health examination or health conference and inspection should be held with all students on returning to college after absence on account of sickness. Moreover, repeated examinations should be given students who, at the time of the regular examination, are found in need of continued medical observation.

Examination forms.—An example of a health education form used in a well-known college for men is shown on page 68. Forms on page 70 are used to secure information regarding health background, health habits and traits, physical tests and measurements, and medical information for college women.⁹ The Wellesley form is used in giving an examination in the junior year in lieu of an annual examination. The examination forms for men and women at the University

⁹ An excellent report by a committee of the American Physical Education Association (Dr. Gertrude E. Moulton, *Research Quarterly*, Vol. 5, No. 3, October, 1931), presents the techniques for giving the *physical* examination to girls and women.

of Michigan provide places for a health rating of A, B, C, D and E. A indicates unlimited activity, B unlimited with observation, C restricted and corrective, D reconstructive activity, and E excused from activity.

WESLEYAN UNIVERSITY

ANNUAL MEDICAL EXAMINATION

To be presented at the time of registration

Name Date
 Last name First name

A medical examination by a legally qualified physician is required *annually* of each student before entering Wesleyan. The examination should be made not more than thirty days before the opening of college.

To the Physician:

Practically every student at Wesleyan, because of a college requirement or voluntarily, engages in physical activities throughout the college year. This record will be used as a basis of advice to the student concerning such matters. The responsibility therefore for the future welfare of the student is placed very largely upon the examining physician and the parent. The College Physician will give his attention for the most part to those students who seem to be in need of further advice and checking up.

The examining physician is requested to be more than usually conscientious in making the examination and recording the facts, inasmuch as the summary of the blank will be the basis for determining the student's participation in many forms of violent physical activity.

Has student had any serious illness within last twelve months? If so, what?

General appearance: Does this indicate good physical condition?
 fair? poor?

What is condition of skin Recommendation

Weight, stripped Height, without shoes feet inches

During last year, did student gain in weight? . . . pounds Or lose . . . pounds

Eyes: External inspection Reflexes

Vision: Does student use glasses? If so, when were his eyes last fitted? Do glasses correct vision to normal? If not, do you recommend a change?

If glasses are not worn: Vision, right eye left eye

Do you recommend glasses?

Ears: Are ears normal If not, list defects and your recommendation

Nose and throat: Is there nasal obstruction, deformity or disease serious enough to demand treatment? If so, what do you recommend?

Condition of tonsils? Have you a recommendation?

Condition of teeth: Are there decayed teeth needing dental care?

Is there evidence of abscessed teeth or infected gums? Do you advise dental care?

What is condition of lungs?.....

Heart: Blood pressure lying.....Heart rate lying.....Reaction
to exercise test.....Any evidence of pathological condition of valves
or myocardium?.....If so, what.....

Is there any evidence of hernia in any form or any pathological abdominal con-
dition?.....If so, what do you recommend

Genitalia.....

Urine: sp. gr.....albumin.....sugar.....

Feet: arches.....Recommendation

Other anatomical or joint defects

.....Recommendation

Other diseased conditions

.....Recommendation

Remarks

As a result of the above examination, it is my opinion that no—the following
—limitation should be placed on the physical and mental activity of the student:

Signed.....M.D.
Examining Physician.

Address

I have read the above report and concur in the recommendations of the
physician.

Signed.....
Parent or guardian.

Address

THIS BLANK PROPERLY FILLED OUT MUST BE PRESENTED ANNUALLY BY EACH STUDENT
TO THE DEAN AT THE TIME OF REGISTRATION.

BARNARD COLLEGE

Department of Physical Education

HEALTH BACKGROUND

Name	Date
Birthplace	Permanent residence
Live at home	University residence
Dormitory?	With private family
Do you room alone?	In boarding house
How many windows?	Sleep alone?
Sunshine?	Time spent commuting
Walking	Surface cars
Where prepared for College?	Subway
Amount of Gymnastics	
Dancing	Tennis
Swimming	Golf
Riding	Canoeing
Skating	Archery
Basket-ball	Base-ball
Hockey	Track
Deck Tennis	What physical activities do you wish to enter at College?
How did you spend your vacation?	
Any entrance conditions?	
Number of hours a week for self-support?	Kind of work
Health of father	Occupation
Health of mother	Occupation before marriage
Own occupation	Date of last successful vaccination
Number of brothers and sisters living and ages	Dead
What members of family or near relatives had—Tuberculosis, paralysis, epilepsy, hysteria, cancer, rheumatism, kidney or any chronic disease?	
Kind of sleep?	Dream?
Urinate at night?	
Daily bowel action?	Laxative?
How often?	What?
Headaches?	When
Where	
Glasses?	When last examined?

HABITS AND TRAITS

1. What is your hobby?
2. What is your chief complaint?
3. Do you have frequent colds? Head .. Nose Throat .. Chest ..
4. What habits have you injurious to your health which you could correct? ..
5. Is your posture habitually good or bad?
6. Do you have discomfort at menstrual period?
- Do you exercise violently then?
- Do you fail to take any exercise then?
7. Do you lose your temper easily?
8. Do you worry and fret?
9. What time do you generally go to bed?
- How many hours do you sleep?
10. Do you have a daily rest period?
11. Do you habitually over-work?
12. Do you habitually over-play?
13. Do you get some exercise in fresh air daily?
14. Do you eat meals regularly?
15. Do you eat breakfast?
16. Do you habitually over-eat?
- Under-eat?
- Meals well balanced?
17. Are you finicky about your food?
18. What do you eat between meals?
19. Do you smoke?
- How many?
- When did you begin?
20. Do you use tea or coffee to excess?
21. Any faulty food habits?
22. Do you consider your health excellent, good, fair, poor?
23. Can you swim?
- How far?

HEALTH HISTORY FORM FOR COLLEGE WOMEN. (Front and reverse.)

UNIVERSITY OF MICHIGAN

HEALTH SERVICE

HEALTH EXAMINATION

Name _____ Age _____ year in University 1, 2, 3, 4, _____

SELF EVALUATION OF PERSONAL HEALTH FACTORS.

The following should assist you to state your situation in relation to the factors which we regard as the determining influences in one's health (Student fill out this part in duplicate).

- HEREDITY.** There is good reason to think that age of ancestors will largely influence your life span.
 Father's father age _____ or age at death _____ cause of death _____
 Father's mother: age _____ or age at death _____ cause of death _____
 Mother's father: age _____ or age at death _____ cause of death _____
 Mother's mother: age _____ or age at death _____ cause of death _____
 Father: age _____ general health _____ age and cause if dead _____
 Mother: age _____ general health _____ age and cause if dead _____
 Number brothers and sisters: living _____ dead _____ General health of family: good, fair, poor, _____
 Predominant nationality. English, German, Jewish, etc. _____
- NUTRITION.** As infant: breast fed, bottle fed, both, don't know. Your earlier life: Milk; little, moderate, much Vegetables; little, moderate, much Sweets, little, moderate, much. Present habits: Milk; little, moderate, much. Vegetables; little, moderate, much. Sweets; little, moderate, much Food in general, little, moderate, much
- ACTIVITY.** Past habits of physical exercise—little, average, much. Out of doors during winters; little, average, much.
- REST.** Average daily hours sleep _____ regular, irregular. Sleeping room ventilation; little, average, much. Your best form of recreation _____
- ELIMINATION:** Bowel movements; satisfactory, unsatisfactory, daily, less often, oftener. Body heat regulation (attention to and interest in clothing and living room temperature adjustment); much, average, or little attention given to it.
- PERSONALITY REACTIONS:**
 (a) Concerning your work and your life outlook, are you—happy, only partially so, unhappy? Other _____
 (b) Many personal reactions are called "nervousness". Underscore the following which you feel apply to you. Worry easily—moody—self-conscious—seclusive—easily misunderstood—sleepless—sensitive—feelings of being inferior to others—tired—loss of appetite—unable to make close friends—poor mixer—envious—over reserved—unable to make decisions,—introspective.
- POISONS:** (Underscore if possibly applicable) Industrial, self medication, alcohol, dusts, carbon-monoxide (gas engine, furnace, open heater gases) Asthma—Hay fever—Urticaria (Hives) Rose fever—Food poisoning—Eczema.
- PARASITISM:** Are you particularly subject to infections as: "colds", "boils", sore throats, thro skin openings? Yes or no _____ Have you been associated with a known case of tuberculosis? Yes or no _____
- MECHANICAL INJURIES:** Have you been particularly unfortunate in having—sprains, fractures, bad bruises, surgical operations, burns, auto accidents, severe falls? (Underscore and indicate something as to degree of such misfortunes) _____
- At the time of your entrance medical examination did you understand that you needed further medical attention? _____ If so, have you received it? Completely, partially, not at all.
- If your tonsils have been removed, indicate condition of your health since the operation—much improved, improved, same, worse.
 Explain _____ Year of operation _____
- As a result of previous medical attention or otherwise, is there anything which you suspect now needs the careful attention of a sympathetic physician? _____

PERSONAL AND EXAMINER'S RATING SHEET (Front).

HEALTH SERVICE

73

Barnard College

Department of Physical Education

HEALTH GRADL

NAME	ADDRESS	CITY	STATE	ZIP	PHONE
...

AGE _____

DATE OF ENTRANCE

CLASS OF _____

ADDRESS _____

DATE					STRENGTH—GRIP R.						
WEIGHT					GRIP L.						
HEIGHT					CHEST						
HEIGHT—Sitting					Sh. Retractors						
GIRTHS—Neck					FEET	R	L				
Chest—Expanded					ANT ARCH						
Contracted					LONG ARCH						
Ninth Rib—Expanded					GENERAL						
Contracted					POSTURE						
Waist					1						
Hips					2						
BREADTH—Chest—Expanded					3						
Contractd					4						
DEPTH—Chest—Expanded					5						
Contracted					BACK						
ABDOMEN											
LUNG CAPACITY											

(OVER)

(OVER)

FORM FOR RECORDING THE RESULTS OF PHYSICAL EXAMINATIONS (Front).

	I	II	III	REMARKS.	Date
DATE				I	
TEETH					
NOSE AND THROAT					
VISION—L					
" R				II	
HEARING—L.					
" R.					
GLANDS					
THYROID				III	
Joints					
SKIN					
BLOOD PRESSURE					
CIRCULATION					
HAEMOGLOBIN					
HEART TONES					
ACTION				Posture	
SIZE				R. Ft.	
MURMUR				L. Ft.	
LUNGS—R				Back	
" L				Bowels	
REFLEXES				Mens	

Digestion **Gas**

Daily Bowel Action	Lexative	How Often
--------------------	----------	-----------

Hour of Sleep	Tea	Coffee
---------------	-----	--------

Menstruation	Age of Appearance	Duration	Interval
--------------	-------------------	----------	----------

Pain	Before		Leucorrhoea
	After		

Accidents

Pathological Conditions Remediable

Physical Defects Remediable

FORM FOR RECORDING THE RESULTS OF PHYSICAL EXAMINATIONS (Reverse).

PHYSICAL EXAMINATION

No. _____
(Col. 1-5)

FORM FOR MEN

Date _____
(Col. 6. Code last digit)STUDENTS' HEALTH SERVICE
University of Pennsylvania

(Important.—Fill in this page at the time of your first examination. Use a ✓ mark for affirmative, O mark for negative replies, and a ? mark if you do not know. Do not leave any question unanswered.)

Name _____ College _____ Year _____
(Col. 7-8. Code 1)

Freshman (1) Single (1)
 Sophomore (2) Married (2) (Code direct)
 Junior (3) Widowed (3) (Col. 9)
 Senior (4) Divorced (4)
 Graduate
 Unclassed

Dates of previous physical examinations at University of Pennsylvania _____

Address—City _____ Age (nearest birthday) _____ (Col. 10, 11. Code direct)

Home _____ Religion _____

Country of your birth _____
 " " father's birth _____
 " " mother's birth _____

(Col. 12-11) Population of community in which you spent most of your life before coming to college

Less than 50 (a)
 50- 999 (b)
 1000- 4999 (c)
 5000-49,999 (d)
 50,000 or more (e)

Family History:

Father living (f) Age _____
 Dead (g) Age at death _____
 Cause of death _____

Mother living (f) Age _____
 Dead (g) Age at death _____
 Cause of death _____ (Col. 14)

During most of your childhood were you

the only child (a)
 oldest child (b)
 youngest child (c)
 neither oldest nor youngest child (d) (Col. 15)

How many brothers have you living _____
 sisters living _____
 How many brothers dead _____
 sisters dead _____

CODE A

1 = a + f
 2 = a + g
 3 = b + f
 4 = b + g
 5 = c + f
 6 = c + g
 7 = d + f
 8 = d + g
 9 = e + f
 10 = e + g

In the following figure put a ✓ mark in the proper space to indicate illness, past or present, among your relatives:

	(Code B)	Paternal					Maternal					Brothers	Sisters
		Father	Grandfather	Grandmother	Uncles	Aunts	Mother	Grandfather	Grandmother	Uncles	Aunts		
Tuberculosis or consumption (1)													
Apoplexy or stroke (2)													
Kidney trouble or Bright's disease (3)	(Col. 16)												
High blood pressure (1)													
Heart disease (2)													
Sick headaches (3)	(Col. 17)												
Convulsions or epilepsy (1)													
Nervous trouble (2)													
Mental trouble (3)	(Col. 18)												
Cancer (1)													
Diabetes (2)													
Tendency to bleed easily (3)	(Col. 19)												

CODE B

1 = 1
 2 = 2
 3 = 3
 4 = 1 + 2
 5 = 1 + 3
 6 = 2 + 3
 7 = 1 + 2 + 3

Check the following past illness which you have had, after the check mark write the age at which you had the illness, put a 0 after the ones you have not had

Scarlet fever (1)		Measles (1)		Syphilis (1)	
Diphtheria (2)		Smallpox (2)		Gonorrhea (2)	
Inflammatory rheumatism (3)		Pneumonia (3)		Whooping cough (3)	
	(Col. 20)		(Col. 22)		(Col. 24)
St. Vitus dance (1)		Influenza (1)		Malaria	
Nervous breakdown (2)		Tuberculosis (2)		Chickenpox	
Typhoid fever (3)		Pleurisy (3)		Heart Disease	
	(Col. 21)		(Col. 23)	Others	

Have you ever had any _____
 (broken bones)
 operations on nose or throat
 other operations

EIGHT PAGE FOLDER FORM DEVELOPED AT THE UNIVERSITY OF MINNESOTA AND ADAPTED
 BY THE UNIVERSITY OF PENNSYLVANIA (Page 1).

2

Use ✓ marks for affirmative and O for negative replies whenever possible. Do not leave any unanswered.

CODE A 1 = a + f 2 = a + g 3 = b + f 4 = b + g 5 = c + f 6 = c + g 7 = d + f 8 = d + g	Living conditions while attending University — At home (a) In family other than your own (b) In rooming or fraternity house (c) In dormitory (d) Congenial and quiet (Col. 25. Code A) Congenial and noisy Depressing Irritating Conducive to study Not conducive to study
	Are your funds adequate to support yourself comfortably Yes (f) No (g)
	Are you (a) partially self-supporting (b) completely self-supporting (c) not self-supporting Are you working toward your support during the school year Yes (f) No (g) (Col. 26)
	How did you spend last summer (a) On vacation (b) In school (c) Working full time (d) Working part time Were you in school anywhere last year Yes (f) No (g) (Col. 27)
CODE C 1 = a + x 2 = a + y 3 = a + z 4 = b + x 5 = b + y 6 = b + z 7 = c + x 8 = c + y 9 = c + z	If working last summer, what was the nature of your work (a) Physical work, housework, or odd jobs (b) Salesman or agent (outdoors) (c) Clerical, office, or technical indoor work (d) Not working (Col. 28) (Code A)
	Is any one else dependent even in part, upon your earnings. Yes (f) No (g)
	If working during the school year, how many hours per week does your employment require (a) Less than 15 (b) 15 to 39 (c) 40 or more (Col. 29)
	And what is the nature of your work (a) Physical work, housework, or odd jobs (b) Salesman or agent (outdoors) (c) Clerical, office, or technical indoor work (Code C)
CODE D 1 = a + r + x 2 = a + r + y 3 = a + r + z 4 = a + t + y 5 = b + r + x 6 = b + r + y 7 = b + t + x 8 = b + t + y	What extra-curricular activities, other than athletics, are you engaged in _____ How many hours per week do these require _____ What exercise do you take in addition to your work, and what sports do you engage in _____ _____ Hours per week _____ How much tobacco do you use per day _____ How frequently do you use candy _____ In what social organizations (fraternity, club, church, etc.) do you take an active part _____ What are your pleasures and recreations _____
	This column to be checked by physician Extra-curricular activities — None (a) Moderate (b) Excessive (c) Sports and athletics — None (a) Moderate (b) Excessive (c) (Col. 30. Code C) Tobacco — None (a) Moderate (b) Excessive (c) Recreation and social activities — None (a) Moderate (b) Excessive (c) (Col. 31. Code C)
	How many meals do you eat daily _____ Time of meals _____ Regularly _____ Where _____ Between meals _____ Before retiring _____ Are you a (small/moderate/hearty) eater How much do you drink daily of (milk/water/tea/coffee/soft drinks) glasses List the foods of which your average meal consists — Breakfast _____ Lunch _____ Dinner _____ Do you have a room to yourself Yes No (Col. 32. Code D)
	What is the average number of hours you sleep at night _____ What is your usual retiring hour _____ Rising hour _____ Is your sleep regular restful disturbed Do you have a bad tooth _____ Keep windows open at night _____ Do you stammer or stutter Yes (x) No (y) (Col. 33. Code D)

EIGHT PAGE FOLDER FORM DEVELOPED AT THE UNIVERSITY OF MINNESOTA AND ADAPTED BY THE UNIVERSITY OF PENNSYLVANIA (Page 2).

Place a ✓ mark after those conditions to which you are subject and a O after those which you never have.

This space for amplification of positive symptoms by physician.

Earaches
Discharge from ears
Deafness
Ringing in ears

Aching eyes
Eyes sensitive to light
Inflamed lids
Styes
Blurred vision
Double vision

Sinus infection
Chronic discharge from nose
Frequent colds in the head
Difficulty in breathing thru nose
Nosebleed
Hay fever

Frequent sore throat or tonsillitis

Colds with persistent cough
Bronchitis
Hoarseness
Cough without recent cold
Pain on breathing
Spitting blood
Night sweats
Asthma

Over the past two years: have you gained in weight _____ How much _____ Lost weight _____
How much _____ Maintained the same weight _____

Sensation of heart beating
" " " " unusually slowly
" " " " " rapidly
" " " " irregularly

Shortness of breath upon moderate exercise
Choking sensations
Pain over chest
Tight feeling over chest
Swelling of hands, feet, eyelids
Muscle cramps
Did you have growing pains in childhood
Rheumatism of any kind

Is your appetite below normal—average—excessive
Is your thirst below normal—average—excessive
Are you subject to abdominal discomfort (indigestion)
Is it unrelated to meals
after meals
when stomach is empty
accompanied by constipation
accompanied by diarrhea
Are you subject to belching of gas
Do you have a bowel movement daily
How frequently do you take cathartics
What kind _____
Do you have pain with bowel movements

Burning or smarting urination
Too frequent urination during day
Necessity of urination during night

4

Place a ✓ mark after those conditions to which you are subject and a O after those which you never have.	This space for amplification of positive symptoms by physician.
Nervousness	
Insomnia (sleeplessness)	
Sense of exhaustion	
Headaches, unrelated to colds	
Fainting spells	
Fits or convulsions	
Dizziness	
Backache	
Tingling in hands or feet	
Stammering or other speech difficulty	
Have you ever been refused life insurance.	
Yes. No.	
Do you consider yourself in good health	
If not, what is your complaint	
Do you wish to discuss any question in regard to your health, family history, sex, or personal habits with a physician. Yes No	
	(Omit Col. 34)

CODE B	Put ✓ after affirmative replies, O for negative.	
1 = 1	Are you subject to worries (1)	Are you subject to moods (1)
2 = 2		
3 = 3	Are you particularly self-conscious (2)	Are you subject to periods of alternating gloom and cheerfulness (2)
4 = 1 + 2		
5 = 1 + 3	Are you bothered by a feeling that people are watching you or talking about you (3)	Are you inclined to be secretive and elusive (3)
6 = 2 + 3		
7 = 1 + 2 + 3	(Col. 35, Code B)	(Col. 36, Code B)

CODE	Have you been vaccinated against smallpox. Date of first successful vac.
1 = No vac., Succ. Diph.	Did it leave a scar. Date of last successful vac.
2 = Unsucc. vac., Succ. Diph.	Did you ever have smallpox.
3 = Old vac., Succ. Diph.	Have you ever had a Schick test. Result of last one. Date.
4 = Rec. vac., Succ. Diph.	Have you ever had toxin-antitoxin inoculations against diphtheria.
5 = No vac., Imm. Diph.	Have you had inoculations or antitoxins against other diseases. What.
6 = Unsucc. vac., Imm. Diph.	
7 = Old vac., Imm. Diph.	
8 = Rec. vac., Imm. Diph.	
(Col. 37)	(DO NOT FILL IN BELOW THIS LINE)

CODE C	Age. (nearest birthday)	Blood pressure (sitting)	Hour
1 = a + x	Height. (Col. 38-39)	sys. (Col. 49-50)	Posture rating A B C D
2 = a + y	Weight—present. (Col. 40-41-42)	dia. (Col. 51-52)	
3 = a + z	usual		
4 = b + x	% of standard. (Col. 43)	Pulse rate sitting. (Col. 53)	Smallpox vac. (Col. 55) O (a) + (y) — (x)
5 = b + y		after exercise	
6 = b + z	Temperature. (Col. 44)	2 min. later. (Col. 54)	
7 = c + x	Hemoglobin. (Col. 45)	Urine	Kolmer test O (a) + (b) — (c)
8 = c + y	Vital capacity. (Col. 46-47)	sp. gr.	Mantoux O (a) + (y) — (x)
9 = c + z	% by height. (Col. 48)	alb.	
10 = d + x		sugar. (Col. 56)	
11 = d + y			
12 = d + z			

PHYSICAL EXAMINATION		All Positive Findings Should Be Amplified		
Dental				
CODE C 1 = a + x 2 = a + y 3 = a + z 4 = b + x 5 = b + y 6 = b + z 7 = c + x 8 = c + y 9 = c + z	Caries	o (a) — 1 (b) — 2 (c)	(Col. 57)	
	Amount of dentistry	o (x) — 1 (y) — 2 (z)		
	Ptyorrhea	o (a) — 1 (b) — 2 (c)	(Col. 58)	
	Teeth suspicious for periapical infection	o (x) — 1 (y) — 2 (z)		
	Unrupted teeth		o — 1 — 2 — 3 — 4	
	Recommendations		Examined by _____	
Head and Face	Color vision			
	Vision test	R _____ Corrected to L _____		
	Blindness	(Partial) _____ (Complete) _____		
	Lids	(Ptosis) _____ (Inflammation) _____		
	Pupils	R _____ L _____		
	Hearing test	R _____ L _____		
	Excessive cerumen	R _____ L _____		
	Ear drum	(Perforation) — R — L _____ (Retraction) — R — L _____ (Thickening) — R — L _____		
	Discharge	R _____ L _____		
	Nose	(Obstruction to breathing) Degree 1 — 2 — 3 _____ (Discharge) (Chr. infect. Polype Dev. septum Spur) (Serous Purulent Foul)		
Jaw	(Deformities. Upper, Lower)			
Interpret Head and Face Findings				
Lips Abnormal — How?				
Mouth and Throat	Mouth	Tongue _____ Palate _____	Coated Swollen Atrophied Red Dehydrated Deviates from Right to Left Tremor Cleft Ulcerated	
	Pharynx	(Inflamed) (Discharge) (Ulcerated)		
	Tonsils	In _____ Out _____	(Normal) (Markedly hypertrophied) (Infected) (Clean) (Non-septic tag) (Septic tag)	
	Larynx	(Aphonia) (Hoarseness)		
	Interpret Mouth and Throat Findings			

Note: (+) = positive; (0) = negative; (?) = unknown; leave blank if not noted.

6

All Positive Findings Should Be Amplified

Neck	Abnormal Pulsation	(Venous Arterial)	
	Thyroid	Enlarged	(Degree 1 — 2 — 3 Diffuse Nodular)
		Consistency	(Soft Medium Hard)
		Tenderness Right > = < Left Bruits	
	Interpret Neck Findings		
Spine	Kyphosis 1 — 2 — 3	— Cervical	Locate by Cross Line
	Lordosis 1 — 2 — 3	— Thoracic	
	Scoliosis 1 — 2 — 3	— Lumbar	
	Limited Motion 1 — 2 — 3	— Sacral	
	Tender on Percussion 1 — 2 — 3	— Sacro-Iliac — Kidney Area	
Interpret Spine Findings			
Fluoroscopic	Chest	(Diaphragm Excursion—Abnormal Costophrenic Angle—Obiteration Hilus Area—Calcification Lung Parenchyma—Suspicious Shadows Apices—Unequal Aeration Position—Abnormal Shape—Abnormal Apparently Enlarged)	
	Heart		
Chest and Lungs	Mam in Breast	(Size (cm) _____ Tenderness _____ Connects with Skin _____ Examiner's Impression _____)	(Benign Malignant Questionable)
	Describe Type of Chest and Costal Angle		
	Deformities of Chest	Emphysematous Rachitic Unilateral	
	Inspection	Interspaces Rib	(Retracted Bulging)
		Abnormal Respiratory Movement	(Unequal Decrest Limited Limited Ant. or Post.)
	Tactile Fremitus		
	Percussion	Hyperresonance Dull, Flat	
		Abnormal Breath Sounds	(Vesicular Broncho-Vesicular Tubular Diminished Absent)
	Auscultation	Abnormal Whispered Voice	(Very Loud, Increased, Diminished, Absent)
		Abnormal Spoken Voice	(Very Loud, Increased, Diminished, Absent)
Rales Friction Rub		(Moist, Dry, Coarse, Fine, Musical)	
Interpret Chest and Lung Findings			

Note: (+) = positive; (0) = negative; (?) = unknown, leave blank if not noted.

All Positive Findings Should Be Amplified

Heart	Inspection	Dilated Vessels	Neck Arm Chest	
		Abnormal Pulsations		
		Bulgings		
	Palpation	Localize Apex Shock: Sys. Diastolic Thrill: Sys. Dias. Presys.		
	Percussion	Outline Abnormal		
		Aortic 2nd > = < Pul. 2nd		
		Diminution	1st 2nd	A.P.M.T.
		Accentuation	1st 2nd	A.P.M.T.
		Murmurs	Sys. Dias. Presys.	A.P.M.T.
		Murmur Transmitted		
		Abnormal Rhythm		
Abdomen	Inspection	Peristalsis Distention Dilated Vessels Operative Scars		
		Tender: General, Local; 1, 2, 3 Rigid: General, Local; 1, 2, 3 Fluid Wave		
		Liver Edge Spleen		
		Organs	Kidney Bladder Colon Gall Bladder	Enlarged Movable
		Palpation	In Abdominal Wall	Ing. Hernia Fem. Hernia Ventral Hernia
		Mass	Intra- Abdominal	Locate Describe Movable Fixed
		Inguinal Rings Relaxed		
		Interpret Abdominal Findings		
Extremities	Edema Varicosities Club Digits			
	Motor	Atrophy Hypertrophy Spasm Fibrillation Paralysis Tremor		
	Legs	Excessively bowed		
	Joints	Describe abnormality		
	Flat Feet	No pain Slight pain Excessive pain		
		Interpret Extremity Findings		
General Physique	Hypersthenic type	(a)		
	Sthenic type	(b)		
	Asthenic type	(c)		
	Obese	(d)		
	Flabby musculature	(f)		
	Normal	(g)		
		(Col. 5 ⁴)		

CODE A

1 = a + f
2 = a + g
3 = b + f
4 = b + g
5 = c + f
6 = c + g
7 = d + f
8 = d + g

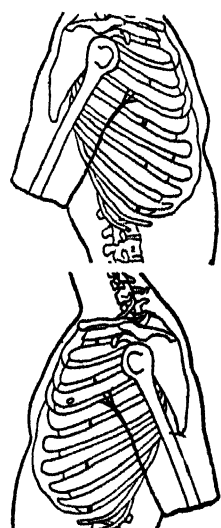
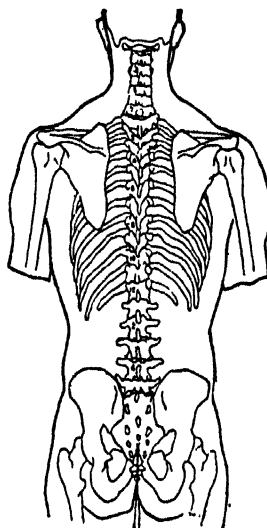
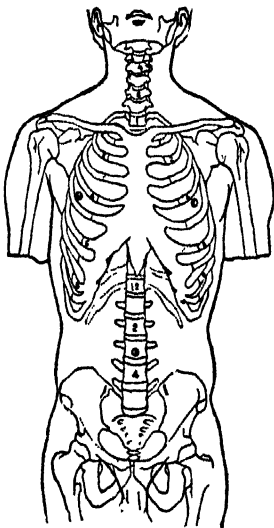
Note (✓) = positive; (O) = negative; (?) = unknown, leave blank if not noted

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All Positive Findings Should Be Amplified				
Lymph Nodes	Cervical: Enlarged 1--2--3, Tender		0	
	Axillary: Enlarged 1--2--3, Tender		1	
	Epitrochlear: Enlarged 1--2--3, Tender		2	
	Inguinal: Enlarged, 1--2--3, Tender		3	
Skin	General	Andruse.....	Generalized	4
		Hyperidrosis.....	Trunk	5
		Cyanosis.....	Upper Extremities	6
		Jaundice.....	Lower Extremities	7
		Pallor.....	Nails	8
	Local	Pigmentation.....	Scalp	9
		Petechiae.....	Face and Neck	10
		Edema.....	M M of Mouth	11
		Inflammation.....	Conjunctiva	12
		Lesion.....	Genitalia	13
Genitalia	Male	Discharge	14	
		Scar	15	
		Tumor	16	
		Phimosis	17	
		Testicular Atrophy (R)	18	
		Varicocele (L)	19	
		Undescended testis (L)	20	
Anus	Fissure		21	
	Fistula		22	
	Hemorrhoids		23	
Consultation Reports.				
Changes since last examination				
Summary Defects of function and structure and errors of habit				
Advice				
Signature				
Examining Physician				

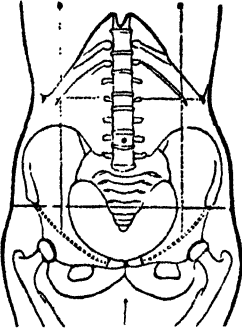
Nose.	Alae	septum	turb. inf.	R. L.	mid. R. L.	sup. R. L.	polyp. R. L.
	Catarrh		hyperplastic			atrophic	
	Other conditions						
Sinuses.	frontal R.	L.	ethmoidal R.	L.	sphenoidal R.	L.	antrum R. L.
Mouth.	Gums normal		pyorrhea		other conditions		
	palate		uvula		tongue		
Teeth.	reg. upper	irreg.	exc.		good	poor	
		8 7 6 5 4 3 2 1		1 2 3 4 5 6 7 8			
	lower						
	x = fillings, o = absent; c = caries; a = abscess; l = large; s = small						
Tonsils.	R normal	hypert	irreg.	smooth	soft	fibrous	diseased
	L "	"	"	"	"	"	"
Pharynx.	normal	catarrh hypert	atroph	fol.			
Larynx							
Heart.	normal	reg.	irreg.				
rest	apex 1st sound				2nd sound		
+	base 1st				2nd		
+	rate—standing		reclining		after exercise.		
+	reclining	B p. standing	S. D. pulse		Ath. class	A B C D	
+	"	reclining	"				
+	"	sitting	"				
+	after exercise	"	30 sec.	"			
+	"	"	45 sec.	"			
+	"	"	60 sec.	"			
+	"	"	90 sec.	"			
Functional Tests							
Wt	work	"	120 sec.	"			
Skipping							
Deep knee bending							
Running in place							
Electrocardiogram, advised			taken date				
Chest					Symmetrical		
					Asymmetrical	pigeon	funnel
						pterygoid	



Abdomen. normal concave convex obese surface abnormalities



Scars
Liver spleen
Kidney. R. L.
Intestine



Skin reflex
Musc. "
Sensitive points
Spasm
Pain
Glands
Masses
Flatus
Other facts
Hernia
Genitalia
Rectum

Orthopedic. Posture, g. P.



Head, erect forw. or

Spine. Scoliosis

Kyphosis Lordosis

Shoulders

Spine flex rigid

Pelvis

Sacro-iliac R.

" L.

Coccyx

Hipjoint R.

" L.

Extremities

" measurements

Knee R. L.

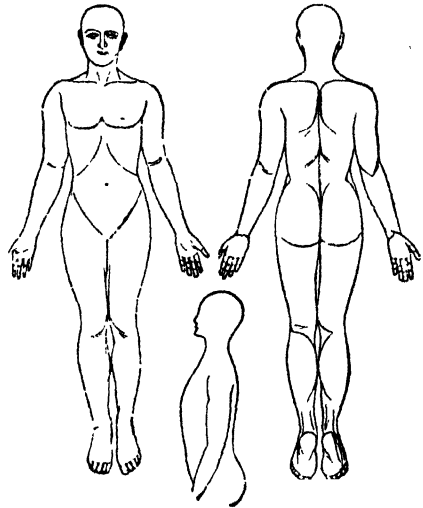
Genu varum genu valgum

Foot R. W 123 F 123—L. W 123 F 123.

All bones and joints of body normal

Muscles uniformly developed.

Other facts



<i>Skin, Color.</i>	.....	tone	.....	lesions	.....
<i>Scalp</i>	.....			
<i>Nails, normal</i>	.....	or	.....	
<i>Nervous system, speech defects</i>	.....			
<input type="checkbox"/> gait	.....			muscular co-ordinations	.....
<input type="checkbox"/> Romberg	.....	tremor	.....	spasm	contracture
<input type="checkbox"/> trophic	.....			
<input type="checkbox"/> Reflexes;	.....	eye	skin	wrist	knee
	.....	Kernig			ankle clonus
<input type="checkbox"/> other tests	.....				Babinski
				
<i>Glands.</i>	Cervical ant	.....	post	.....	axillary
<input type="checkbox"/> Groin	.....	other	.....	
<input type="checkbox"/> Sublingual	.....			maxillary	parotid
<input type="checkbox"/> Thyroid	.....			
<input type="checkbox"/> Endocrine	.....			
<i>Veins.</i>	Varicose	.....		
<input type="checkbox"/> Varicocele	.....	1, v l m s	.....		hemorrhoids
<input type="checkbox"/>				
<i>Arteries.</i>	soft	.....	sclerotic	.....
<i>weight</i>	.....			height	.....
<i>Nutrition</i>	Ex	g	f	p	consistency of tissue. vi, h, m, s, vs,
<i>Fatty tissue</i>	excessive	.....	medium	.....	deficient
<i>Vitality.</i>	excessive	.....	normal	.....	al below
<i>General attitude</i>	.....				deficient
<i>Nervous balance</i>	.....			
<i>Psychoneurosis</i>	.....			
<i>Adol</i>	.....			
<i>Ability to work for wages and also carry full academic program</i>	*1	.....		
<i>Ability to do required work in Physical Education</i>	*2	.....		
<i>Ability to do required laboratory work</i>	*3	.....		
<i>Report made to Dean</i>	.....				Date
" " " Phys Ed.	.....				"
" " " Employment Bureau	.....				"
" " " Advisor, Prof.	.....				"

Office University Physician Columbia University

History Form C

No. Columbia College, Class
Date of Admission

1. Date of birth, yr .. mo .. day .. Nationality
2. Father, living .. present health: excellent .. good .. poor .. If dead, cause ..
.....

3. Mother, living .. present health: excellent .. good .. poor .. If dead, cause ..
.....

4. How many brothers .. living .. dead ..
5. How many sisters .. living .. dead ..

6. Give the chronological order of birth of brothers and sisters, with ages, using x to show your own place in the family group. (e.g. B24, S19, X17, S12, etc.) ..
.....

7. Has any member of your family in the past two generations had any of the following diseases?
(e.g. Tuberculosis—uncle F—uncle, father's family.)
Epilepsy—uncle M—uncle, mother's family.)

Cancer	Kidney disease
Diabetes	Mental disease
Epilepsy	Nervous disease
Tuberculosis	

8. Have you ever had any of the following diseases? If so, at what age? Kindly place the figure representing the age next to diseases you have had. (e.g. Measles 8.—I had measles when I was eight years old.)

Chicken Pox	Malaria	Rheumatism
Convulsion seizure	Measles	Scarlet Fever
Diphtheria	Menngitis	Tonsillitis
Encephalitis	Mumps	Tuberculosis
German Measles	Neuralgia	Typhoid Fever
Heart disease	Pneumonia	Venereal disease
Kidney disease	Polomyelitis	Whooping Cough

9. Have you ever suffered from any nervous disease?

10. Have you ever had an illness of more than a week's duration? .. If so what was the illness? ..

11. Have you ever been absent from school for more than a month during the past five years? .. If so, why? ..

12. Have you ever been compelled to modify or drop your program of studies because of ill health or disability? .. If so, why? ..

13. Do you enjoy physical activity? ..

14. What is your favorite form of physical activity? ..

15. Did you take part in the gymnasium work of your school? .. Was it compulsory? ..

16. Did you take part in the athletic schedule of your school? .. Was it compulsory? ..

17. Have you ever been required because of physical disability to modify or drop completely for any length of time gymnastic or athletic activities? ..

18. Can you swim? ..

19. During the past five years have you been employed in any business? .. Was this during the school year or during vacation? .. Part time or full time work? .. What was the nature of this work? ..

20. Do you plan to undertake any employment during the college year to assist you in defraying your expenses? .. Have you as yet signed up for a job? .. If so what will be the nature of the work and how many hours will you give to the work each day? ..

21. Do you plan to live at home during the college year? .. In college dormitory? .. Fraternity House? ..
Boarding House? ..

HEALTH HISTORY FORM OF COLUMBIA UNIVERSITY (Front).

22. Do you consider yourself in good health at present?
23. Are you subject to asthma bilious upsets constipation convulsions coughs diarrhoea
 discharging ear ear ache eye strain fainting spells hay fever headache head colds
 indigestion moods nervousness night sweats periodic depression and cheerfulness rest-
 lessness rheumatic pains shortness of breath sinus infections skin disease sleepiness dur-
 ing daytime sleeplessness sore throats worries and fears
24. Do you like to be with people or do you prefer to spend your free time alone? Do you make friends easily?
25. Have you learned to concentrate on your work, or do you have a tendency to day-dream or fall asleep over your books?
26. Do you eat your meals regularly? Is your appetite good? Do you eat between meals? Before re-
 tiring? Do you eat much candy?
27. How often do you eat meat (including chicken and fish) daily? Do you usually take more than one helping at a meal?
28. Do you eat all vegetables? Check any vegetables on the following list that you do not eat.
- | | | |
|------------------|------------|----------------|
| Artichokes | Corn | Peas |
| Asparagus | Cucumber | Radishes |
| Beets | Egg plant | Spinach |
| Broccoli | Kohl-rabi | Squash |
| Brussels sprouts | Lettuce | String beans |
| Cabbage | Lima beans | Sweet potatoes |
| Carrots | Okra | Tomatoes |
| Cauliflower | Onions | Turnips |
| Celery | Parsnips | White potatoes |
29. Do you eat rapidly?
30. How much water do you drink daily? milk tea coffee cocoa soft drinks
 alcoholic drinks
31. Do you smoke? At what age did you begin? How much tobacco do you use daily? cigarettes
 pipes cigars Has this been about your average consumption since you began to smoke?
32. Do you inhale as a rule? Do you think that smoking has been injurious to your health? Have you ever tried to stop smoking? If so, with what success?
33. At what hour have you been in the habit of retiring? Rising?
34. Do you sleep soundly throughout the night? Are you restless? Do you dream?
35. Do you feel rested in the morning?
36. Do you sleep with the bedroom windows opened fully, top and bottom?
 Top down inches Bottom up inches Windows closed
37. How many hours of sleep must you have to be fully rested?
38. Do your bowels move daily? If so, when? Upon arising? After breakfast? Bed time?
 After each meal? At irregular periods?
39. Do you take a laxative regularly every day? Once a week? Occasionally? Never? What do you use as a laxative?
40. Do you ever have abdominal pains of any kind?
41. Do your eyes ever trouble you?
42. Do you wear glasses?
43. Have you ever had any trouble with your feet?
44. Have you been protected by vaccination against smallpox typhoid fever diphtheria or other dis-
 eases? If so, when?
45. Have you ever had a surgical operation? If so, state the nature of the operation Date
46. Have you ever had a serious accident? Broken bone?
47. How often do you consult your dentist? When was your last appointment?

UNIVERSITY OF ILLINOIS
HEALTH SERVICE

Name.....Age.....College.....Class.....

MEDICAL RE-EXAMINATION OF ATHLETES

Date.....

Sport participating.....

S. P. V., Satisfactory Yes. No. Typhoid Vac., Satisfactory Yes. No.

Lungs: Norm. Remarks.....

Heart: Norm. Remarks.....

B. P.....Pulse rate (rest).....After 10 full rapid bends.....3 min. after.....

Abdomen: Norm. Remarks.....

Hernia: Yes. No. Type.....

Deformities, recent operations, illnesses: Yes. No. Remarks.....

Urine: Col.....React.....Sp. Gr.....Alb.....Sug.....Sed (Centrif.).....

Passed.....Deferred.....Rejected.....M. D.

Date.....

Sport participating.....

S. P. V., Satisfactory Yes. No. Typhoid Vac., Satisfactory Yes. No.

Lungs: Norm. Remarks.....

Heart: Norm. Remarks.....

B. P.....Pulse rate (rest).....After 10 full rapid bends.....3 min. after.....

Abdomen: Norm. Remarks.....

Hernia: Yes. No. Type.....

Deformities, recent operations, illnesses: Yes. No. Remarks.....

Urine: Col.....React.....Sp. Gr.....Alb.....Sug.....Sed (Centrif.).....

Passed.....Deferred.....Rejected.....M. D.

Date.....

Sport participating.....

S. P. V., Satisfactory Yes. No. Typhoid Vac., Satisfactory Yes. No.

Lungs: Norm. Remarks.....

Heart: Norm. Remarks.....

B. P.....Pulse rate (rest).....After 10 full rapid bends.....3 min. after.....

Abdomen: Norm. Remarks.....

Hernia: Yes. No. Type.....

Deformities, recent operations, illnesses: Yes. No. Remarks.....

Urine: Col.....React.....Sp. Gr.....Alb.....Sug.....Sed (Centrif.).....

Passed.....Deferred.....Rejected.....M. D.

1000-2-31-9831-S

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UNIVERSITY OF ILLINOIS
HEALTH SERVICE

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Place of Business	Position
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Typhoid and Paratyphoid.....

Smallpox vaccination.....

Smear	}	for	{	B Typhus	}	was	{	neg	}	19
Feces				B Tuberculosis				pos		19
Urine				Widal Test						
Sputum				Wasserman reaction						
Blood										

[illegible]

UNIVERSITY OF MICHIGAN

UNIVERSITY HEALTH SERVICE

RE-EXAMINATION

(Preliminary examination having been done year before)

Name in full Date

College Address Phone No.

Dept. Year in Univ. 2 3 4 5 Age

I. What grades did you receive last year?

First Semester

Second Semester

II. Have you a room mate?

III. Are you doing any work for pay? ..

What hour total day? Pay year

Is your position permanent yes .. no temporary

IV. What sickness have you had since last year?

V. Do you consider yourself to be in good, fair or poor condition?

Hygiene:

Do you eat three meals a day?

How often do you use cathartics?

How many hours are you in bed at night?

Number of baths or showers a week?

Do you enjoy exercise?

Are you inclined to take regular exercise daily?

Do you have menstrual pain that handicaps you by a day in bed?

or by .. hours in bed?

Are you nervous?

FORM FOR THE HEALTH RE-EXAMINATION (Front).

JUNIOR MEDICAL EXAMINATION

Examiner		Date	
Name in full		Class	
Last name	first name	middle name	
Age	Height	Weight	Hemoglobin
years months			
Eyes: negative	Ears: negative		
Tonsils: negative	Thyroid:		
Lungs: inspection: negative	abnormality		
Percussion: negative	auscultation: negative		
Heart: inspection: negative	pulse rate		
irregular	tension		
Blood Pressure	Palpation: apex beat		
interspace	cm. from mid-sternal line		
in mid-clavicular line	Thrill		
palpitation	Percussion: size normal		
enlarged	position: normal		
displaced	Auscultation: heart sounds: regular		
irregular	intermittent		
valves normal	Murmurs: location		
time	Transmitted		
upward	to axilla		
to back			
Response to exercise			
Abdomen: negative	abnormality		
Menses: began age	regular	excessive	
Do you go to bed	miss class		
Illnesses, injuries, operations, since coming to college: Dates			
College Infirmary record:			
Apparent health:		Apparent endurance	
Student's estimate of health compared with that at entrance:			
Recommendations:			

THIS FORM IS USED AT WELLESLEY COLLEGE IN GIVING A HEALTH EXAMINATION IN THE JUNIOR YEAR IN LIEU OF AN ANNUAL EXAMINATION.

The form on page 71 is used for the self-evaluation of personal health factors and the reverse side contains a score card with 20 items for grading the student on the basis of indicated maximum points for each item.

Examples of the elaborate examination forms used at some of the larger universities are shown on pages 74-87. The eight-page form for men at Pennsylvania, and the one in use at Minnesota from which it was designed, are excellent indications of the complete health

service offered at these institutions. Columbia illustrates a desirable one of a different type.

Cards pictured on pages 88-90 are used at Illinois for the re-examination of athletes and employee's medical record. The Michigan form is used for a re-examination of students when a preliminary examination has been done the year before.

Follow-Up Health Conferences.—A committee of the National Conference on College Hygiene¹⁰ made the following comment regarding follow-up conferences:

"Follow-up conferences with students examined before or shortly after admission should be conducted for the purpose of defining and analyzing physical and emotional defects found on prematriculation examination and advising the student concerning the care of such defects. Appointments for such conferences should be made at the time of prematriculation health examination and should be immediate, intermediate, or remote in time, according to the defects found. Students with no apparent defects should also be given appointments for follow-up conferences at dates not later than three months after the prematriculation examination in order to determine physical and emotional adjustment to college life. Such conferences should be executed by the director of student health service, or by a physician on the staff who is especially informed and interested in hygiene and in the health needs of the individual student. Such conferences should be repeated at intervals as determined by the nature of the health needs of the individual student throughout the college course. Such follow-up work should include conferences of emotional and social adjustment. In event the health examination or follow-up conference reveals serious defects and the student be a minor, his or her parents should be notified when considered advisable by the director. In certain instances it may be desirable to conduct follow-up contacts after graduation."

The question is often raised as to the desirability of a rule which would refuse admission, exclude from the institution, or deny diplomas to students who refused to correct remediable defects. Some institutions require students to show in subsequent conferences that important health advice given during the routine examination has been followed, show why such advice has not been used, or withdraw from the institution. In the opinion of some this rule is too drastic, especially for publicly supported institutions. Moreover, it is legally unenforceable in some states. State institutions cannot exceed the state requirements and, therefore, this is only possible for communicable diseases for which the state law is operative. Then, too, in many cases the remediable defects would not be sufficiently serious as to warrant such drastic measures.

¹⁰ National Conference on College Hygiene, *Op. cit.*, pp. 13-14.

In spite of this feeling it is obvious that the division of health education will fall short of giving its best service in promoting a healthier and physically better group of college graduates unless some provisions are made to stimulate the students to improve their physical condition. That our colleges are attacking this problem was shown by DeWeese. He reports¹¹ a tendency to exclude students from college until corrections of remediable defects are made. He found in a study of a group of teachers colleges that students are excluded from college or denied diplomas until corrections of remediable defects are made in 70 per cent of the cases; in 6 per cent students are not admitted with defects, so that in 76 per cent of cases students are not permitted to pursue a college education until remediable defects are corrected.

The follow-up health conference (see form page 96) makes possible a re-check of the health examination and the special program advised at that time. The program of academic work and physical and social activity should be definitely decided and consistent with the condition of the student as revealed by examination and subsequent conferences.

Medical Treatment.—One of the most important policies which the department of health and physical education or the division of health education will have to decide is the extent or amount of medical treatment which is to be provided. Universities, in many cases, attempt a rather complete service while the college is likely to provide only a limited service for ambulatory cases. It is quite generally agreed that the college should assume certain responsibilities for the diagnosis, advice, and treatment of students who become ill during college residence. This may be done by furnishing diagnostic facilities either in the student health service or by contract or agreement with community physicians and with community diagnostic laboratories, and by providing or arranging for treatment.

According to a committee¹² reporting on this problem, "Arrangements should be made whereby the advantages of every special diagnostic procedure may be made available directly or indirectly. The diagnostic facilities of the health service should be as complete as the college can afford and should be enhanced in accordance with the development of the health service. Some arrangement should be made with special consultants whereby on occasion the most expert medical opinion may be brought to bear upon the diagnostic problem in question."

¹¹ DeWeese, A. O. "The Standardization of Health Service in Various Institutions." *Proceedings, American Student Health Association, 1929.* p. 73.

¹² National Conference on College Hygiene, *Op. cit.*, p. 17.

UNIVERSITY OF MICHIGAN

ANN ARBOR

University Health Service

....., 193

Dear

From our record of medical attention given to you previously, we feel that it is advisable for you to report here for further attention.

Please report to Dr., between the hours of and, or and, before

Yours very truly,

WARREN E. FORSYTHE, M.D.

Bring this notice with you. It may be helpful in explaining class absence during the hours indicated.

NOTICE TO STUDENTS ADVISING THEM TO REPORT FOR FURTHER EXAMINATION.

Regarding medical treatment the committee had this to say:

"The extent of the treatment supplied by the college should be determined by the ability of the college to provide competent, qualified, and experienced medical service on a par professionally with any other similar available service. The committee desires to emphasize the importance of limitation of treatment to the ability of the college to secure the services of thoroughly qualified physicians. Such physicians should be selected with care and employed either full time or part time by the college. The director of the health service should be a physician well informed in clinical medicine and competent to pass judgment in regard to desirable limitations of treatment within the service. Competent consultant service should be available for reference of special problems in such treatment."

It is important that no attempt be made by the institution itself to do the work of specialists or treat long chronic illnesses unless it is in position to offer the highest quality of professional service. Moreover, the amount of service which may be expected for the health fee should be made known to students.

Dispensary Service.—In the early development of the health program the office of the director of the gymnasium became the center of first aid for accidents resulting in the activity program. This service grew and students naturally sought other forms of medical treatment from the director. The extension and increase in demands have resulted in a dispensary service. Fauver¹⁸ provides a daily sick-call or dispensary service before classes begin each morning. This plan, however, may not be possible in a large university where classes start

¹⁸ Fauver, Edgar. "Health Supervision at Wesleyan University." *The Nation's Health*, July, 1924, Vol. 6, No. 7, p. 50.

at eight o'clock. A study¹⁴ made in 1924 found 80 of 131 institutions conducted a "sick-call" or a dispensary where students might obtain medical attention. Forsythe¹⁵ reported that the number of dispensary calls or treatments at the University of Michigan Health Service for a number of years averaged about 3500 per 1000 students enrolled. On that basis he believed one full time physician without many other duties could care for the work of 2000 students during six hours per weekday and an hour or two on other days.

The report of the University Health Service at Michigan for the year 1929-1930 is presented in Table I.

TABLE I

STATISTICAL DATA

A. Entire Year, Including Summer Session

I. Summary Record

	Dispensary Calls	New Patients	Reported Room Calls	Hospital Refers	Infirm- mary Bed Patients	Hospital Bed Patients
Dr. Forsythe	1,446	168	1	61	6	31
Dr. Sundwall	107	18	..	1	..	..
*Dr. Bell	1,548	257	1	56	77	9
Dr. Sink	2,960	483	..	30	2	1
Dr. Brace	11,476	1,899	461	252	296	80
Dr. Fopeano	6,270	660	330	133	214	50
Dr. Pratt	4,437	670	50	54	135	14
Dr. Ramsey	1,705	352	39	69	9	2
Dr. Bonham	1,442	178	75	5	130	2
Dr. Menzies	1,201	21	126	11	188	7
Dr. Lynam	3,177	64	1	2	5	3
Dr. Madden	1,874	96	111	7	34	9
Dr. Marshall	997	142	..	4	3	2
Dr. Jimenez and others.	5,757	3,650	11	450	..	..
Dr. Peck	1,318	13	..	4	..	..
Dr. Reid	801	40	1	19	..	..
Dr. Dorsey	256	..	29	..	..	2
Dr. Swenson and others.	2,437	..	..	..	..	..
Nurse — Dispensary ...	3,338	34	..	..	..	..
Nurse — Physiotherapy.	7,574	..	..	..	..	..
Mrs. Power	856	3	96	..	..	..
	60,977	8,748	1,332	1,158	1,099	212

* On leave of absence, second semester.

Much of the dispensary routine can be cared for by a well trained dispensary nurse. Return dressings, injections, and other similar duties

¹⁴ Mock, H. et. al. "Student Health Maintenance." Report, Interfraternity Council, 1924.

¹⁵ Forsythe, W. E. "Health Service in American Colleges and Universities." Bulletin No. 11, University of Michigan, September 11, 1926, p. 48.

can be well done by a nurse, thereby saving the time of a physician for more difficult tasks.

If there is to be dispensing of drugs it should be facilitated by co-operation with a pharmacy. Physicians occasionally make mistakes and two are better than one in providing safety. The early training of students, which has created in many of them the very general unjustified faith in the power of drugs in the cure of disease, is another indication of the need for some real health education in connection with the health service. It is the duty of the health officials to teach students that modern scientific health treatment does not necessarily imply a six ounce bottle of liquid. It should be clear, then, that real health education does not depend upon an elaborate provision for the dispensing of drugs.

Students should be encouraged to seek advice and treatment at the dispensary whenever they feel indisposed. In order to bring this about the dispensary should be easily accessible to the entire student population and regular office hours should be held throughout the day and in the evenings, if possible.

Infirmary and Hospital Service.—The college or university should assume further responsibility in the medical and surgical care of students by providing complete or partial infirmary or hospital service to students who actually become ill. This may be done "by urging upon the student the forehanded choice of a competent physician to take care of him when he becomes ill" and "by maintaining directly or indirectly an infirmary especially designed and operated in a way suitable to the care of students who are actually ill, or by ascertaining that the community hospital is dependable both as to management and clinical technique."¹⁶ Some school physicians, however, are not in accord with the statement above. In certain colleges located in small towns with students matriculated from over a wide area students are not encouraged to leave the campus for medical and surgical service. On the other hand, institutions in large cities sometimes find it almost impossible to show the impartiality which is required to present the students with a list of qualified physicians. Particularly is this true where local physicians do both internal medicine and surgery, and so, for the best welfare of the student, a choice must be made. Certainly students should be advised against irregular practitioners.

The infirmary should always be open to receive bed patients. Whether or not it should be open to reputable physicians is debatable and depends upon local conditions. Some college physicians believe

¹⁶ National Conference on College Hygiene. Op. cit., p. 18.

the infirmary should be handled as a closed hospital and students confined there should be treated by staff members except in very rare instances.

The number of infirmary beds needed per 1000 students will vary with local conditions from about 7 to 14 and the nurses provided should be a ratio of approximately one nurse to six infirmary bed patients.¹⁷

Control of Communicable Diseases.—The division of health education, in cooperation with local and state boards of health, should be responsible for the prevention of communicable disease and for the prevention and control of epidemics.

The refusal of admission to students with communicable diseases, and the provision of adequate isolation facilities for the care of students with such diseases, are factors in meeting this responsibility which have been mentioned above.

Vaccination for smallpox, when needed, should be a requirement for admission where possible by law (page 100). In the absence of a scar the usual procedure is to vaccinate the student during the entrance examination. Certificates of previous vaccination against smallpox, in the absence of a scar, is deemed satisfactory, only if it records a positive reaction within five years. Opinions vary as to the policy which should govern "conscientious objections" to vaccination. Private institutions can refuse to admit or can require the withdrawal for non-compliance with the vaccination requirement. On the other hand, it is a legally difficult problem to overrule conscientious or religious objections in state institutions. Officials of these institutions cannot reject for non-vaccination unless there is a state law conferring such authority. State colleges and universities can waive on conscientious objection upon signed waiver of responsibility. However, if an epidemic breaks out on the campus objectors should be vaccinated or asked to withdraw.

The health administrators should attempt to discover carriers of communicable disease by "such procedure as required routine stool cultures of entering students giving a history of typhoid fever, and routine nose and throat cultures required of entering students giving a definite history of diphtheria."¹⁸ In private institutions, and in state universities where legal, prophylactic treatment against diphtheria, scarlet fever, and typhoid fever should be required of students when deemed necessary by the division of health education. Whether inoculations are to be given as a part of the service for the health fee, or whether

¹⁷ Hughes, W. L. *Op. cit.*, p. 53.

¹⁸ National Conference on College Hygiene. *Op. cit.*, p. 16.

the student's private physician must do the inoculating varies with institutions. Where lawful, students should be excluded from classrooms and rooming houses if they show signs of diphtheria, measles, mumps, scarlet fever, smallpox, or other serious communicable diseases.

IMPORTANT NOTICE

In accordance with the vote of the Faculty of Arts and Sciences of March 15, 1927:

"That, beginning with the academic year 1927-28, a certificate of successful vaccination be required of all new students allowed to register in any department under the Faculty of Arts and Sciences."

the attached certificate, duly signed by a physician, must be filed in person or by mail, with the Department of Physical Education, Wadsworth House, Cambridge, Massachusetts, on or before September 19, 1927.

**FAILURE TO COMPLY WITH THIS REGULATION MAY MEAN THAT
YOU WILL NOT BE ALLOWED TO REGISTER.**

I hereby certify that
has been successfully vaccinated.

.....M.D.

.....19.....

NOTICE OF VACCINATION REQUIRED OF ALL STUDENTS ENTERING ANY DEPARTMENT
UNDER THE FACULTY OF ARTS AND SCIENCES AT HARVARD UNIVERSITY.

The policy regarding the control and treatment of venereal diseases is still a debatable one. Some argue that students suffering with acute gonorrhea and syphilis should not be admitted into the institution. Others believe they should be admitted under strict supervision but should not be permitted to attend classes until treatment has been instituted and until given a permit by the health officer. Still others, and doubtless they are in the majority, would make provisions for venereal diseases the same as for any communicable disease. Health education officials should encourage every effort to bring students infected with venereal diseases under observation and treatment. Unquestionably, few health service departments enjoy the confidence of the students infected with these diseases. A majority of such cases probably never come to the attention of the college physicians. Medical information concerning a venereal disease in a student, should be considered as confidential and should under no circumstances be a cause for disciplinary action except where the patient refuses to undergo adequate treatment or fails to follow instructions necessary to protect others.

Laboratory Service.—As has been previously stated, it is important to provide a reasonably complete laboratory service or make arrangements with other laboratories to secure prompt, efficient examination of specimens for the diagnosis of communicable disease, for the identification of carriers on the campus, and frequent and systematic examination of the milk and water supply. The Wassermann or other similar standard test might well be made in so far as local facilities permit although some outstanding internists apparently are opposed to such tests on college students.

Relationship of Staff and Students.—The same confidential relationship should exist between staff members and students as usually is found between practitioner and patient, except where such relationship is in conflict with the best interests of the student body as a whole. Moreover, it should be specifically understood that staff members are not to accept fees from students.

Health Care of Athletes.—One argument favoring the coordination of health and physical education activities, including athletics, into a department of health and physical education is the need for a more complete cooperation between coaches, instructors, managers, and trainers on the one hand and health service physicians on the other. It is logical to assign the responsibility of the health examination of athletes and the care of treatment of injuries and accidents to the division of health education. No coach or trainer should be permitted to exercise responsibility regarding the health of athletes. In this respect both should work under the supervision of a health service physician.

Students should be so informed if the institution assumes no legal responsibility or obligation to meet the expense of caring for athletic injuries sustained by students in athletic training or competition.¹⁹ It is obvious, however, that the institution does have a moral obligation. It is customary in colleges and universities to pay within reasonable limits determined by it, the expense of the treatment of injuries to athletes, provided the injured athlete first secures the authorization of the medical adviser. This policy is subject at all times to the right to decline such aid or to discontinue further aid when it is being given.

Health of Faculty and Employees.—Shall the health services of the college or university be extended to include faculty and employees as well as students? One group believes it desirable, where possible, to extend services to the faculty, while another group contends that the health of the faculty should be left entirely to local physicians except in cases of emergency. Some college physicians do

¹⁹ Opinions regarding legal responsibility differ. See Round Table Conferences on "The Athletic Budget," pp. 32-38. Supplement to the Proceedings, National Collegiate Athletic Association, Chicago, December 29, 1933.

not desire to compete with local physicians. The same view would hold for employees also, except in cases of injury where such employees come under the compensation act and the expense is borne by the institution itself. Certainly the faculty should not be treated by the department unless members pay the regular health fee.

Finances.—As the function of the division of health education is both personal and institutional it seems fair to assume that the expense should be divided between the student and the college. Some college administrators throw up their hands in despair when asked to finance a program of health education. The officials, particularly in some of the smaller colleges, feel that health education is too costly. How finance such a program? The answer is easy. It is a matter of relative values. As has been stated above, most colleges, even those which are very seriously embarrassed financially during a depression, apparently have sufficient funds to finance Latin and higher mathematics. College administrators who are interested merely in "training the mind" will probably insist, as the easy way out, that no funds are available. On the other hand, those officials who are concerned about the education of the "whole student" will find a way by means of appropriations from general funds, by special endowments, or by student fees. Since the student health fee is the most common source of revenue, a limit must be placed upon the services rendered in return for the health fee and this limit must be made known to the students. The department should determine in advance how much in terms of days, weeks, or dollars the health fee will pay toward infirmary or hospital care, nursing service, emergency operations, laboratory and X-ray fees, and anaesthetics. The form on page 103 indicates the amount of service rendered at the University of Michigan. Institutions fortunate enough to have the close cooperation of hospitals are generally able to extend care most economically. In 1921 Edmunds reported²⁰ an average of a little more than five dollars per student as the expenditure per year by the colleges for health services. Roughly three fifths of this went for salaries and two-fifths for expenses. In a more recent study Chenoweth found²¹ thirty-two of fifty institutions charged a fee averaging about seven dollars.

The services offered by colleges and universities varies widely. A few institutions support a high grade dispensary service out of general funds. Others charge students small amounts for such things as drugs, nursing service, X-ray examinations, and similar services. A

²⁰ Edmunds, W. P. "Student Health Service Survey." *The Nation's Health*, May, 1921, p. 325.

²¹ Chenoweth, L. B. "Administration of Student Health Services." *The Nation's Health*, May, 1926.

small charge per day for infirmary service is quite common. Forsythe found ²² that fees for surgical operations are rather general, and range from about five to fifty dollars. He further reports that at Michigan "The average salary for full time, twelve month service, is about \$3500. Nurses, clerks, and attendants make up a total of about thirty persons on the health service staff for an enrollment of over 12,000, including summer session of 3000. The budget amounts to approximately \$55,000, and service includes everything required up to a limit of sixty days of hospital care and operations for ill students. Students pay small fees for elective operations, such as for tonsils, hernia, chronic appendicitis, etc. All other service is provided by the budget, which is made up from an annual \$6.00 fee, including the enrollment fees of regular session students, and \$1.50 for summer students."

UNIVERSITY OF MICHIGAN

ANN ARBOR

University Health Service

HOSPITAL EXPENSE FOR HEALTH SERVICE PATIENTS

1. Health Service Allowance:

When previously approved in writing, the Health Service can pay the following amounts toward the care of its patients in any hospital, within a thirty day limit. Balances are charged to the patient and should be settled upon leaving the hospital.

- (a) \$4.00 per day in addition to operating room, anaesthetic, pathology report and ambulance charges in general hospitals.
- (b) \$5.50 per day and medication in Contagious Ward.

2. University Hospital Room Charges:

- (a) Private room and nursing \$8.00 per day
- (b) Two patient room and nursing \$6.75 per day
- (c) Ward (when available) \$3.50 per day
- (d) Contagious Ward and nursing \$5.50 per day
- (e) Special nursing, casts, dressings, x-rays, etc.... Extra

3. Private Hospitals:

Rates upon inquiry.

4. General care in Health Service Infirmary, within thirty days, without charge when patient is ready to be so transferred.

THIS FORM INDICATES THE AMOUNT OF SERVICE RENDERED STUDENTS IN RETURN FOR THE HEALTH FEE.

The fees were apparently raised the following year to \$10.00 and to \$2.50 respectively.

There is one advantage of charging a student fee. It not only relieves the student of the feeling that he is receiving charity service,

²² Forsythe, W. E. Op. cit., pp. 22-23.

but it is likely to arouse his interest in the health activities. In institutions where a fee is charged it is desirable to have it paid at registration as a part of the general tuition, rather than assessed as a special fee. Moreover, the fee should be sufficient in amount to provide the necessary service to students without the trouble of collecting small amounts.

Those individuals who are opposed to the policy of providing extensive clinical care argue that students should pay for extensive personal service. They do not feel justified in compelling tax payers to provide services for others which they cannot afford for themselves.

So, as was stated above, the institution's health officials must decide upon the extent or amount of health service which is to be provided. Whatever the decision, it is clear that the emphasis should be educational, rather than clinical. Furthermore, provision should be made so that the expense of illness will not in any case stop the educational experience of students with small financial resources. Financial assistance should be provided students who are unable to pay for health services by adjusting the charge and by giving ample time to pay the bill.

Health Records.—There is need for uniform and standard health report forms. Legge²³ in 1921, recognized the need for standard nomenclature of uniform morbidity reports. Diehl²⁴ in 1925, reported the need of uniform records. A uniform record system which includes all information available covering data pertaining to the individual's physical welfare was recommended at the National Conference on College Hygiene. It reported²⁵ that "the details of a record system should be elastic, adapted to the special needs of the particular colleges, and should contain such general data as it required for a complete physical examination. It is desirable to record the family and personal history, list of diseases and operations, immunization record, and a complete medical and dental examination, including the special senses and certain anthropometric and physical capacity tests. It is imperative that this record be consulted and notations recorded at each visit of the student for service and each confinement at the infirmary or hospital. The hospital records in cases of major illness should conform to the minimum requirements, at least, of the American College of Surgeons."

²³ Legge, R. T. "Standard Nomenclature of a Uniform Morbidity Report and Other Features of Standard Reports for Use in Student Health Service." Proceedings, American Student Health Association, 1921.

²⁴ Diehl, H. S. "Report of Committee on Uniform Records for Student Health Services." Proceedings, American Student Health Association, 1925.

²⁵ National Conference on College Hygiene. Op. cit., p. 27.

Forsythe²⁶ has developed a suggested form for annual reports which is reproduced below. The University of Illinois issues rather exhaustive annual reports covering the work of the department and the relation of health to other student activities.

COLLEGE HEALTH SERVICE

SUGGESTED FORM FOR ANNUAL REPORT

Narrative

This section would include general statements having meaning to administration officers or other laymen whom it is desired to interest. It would include interpretations of statistical data, discussion of results of various procedures, and indications of future expansions or changes of policy.

A division of the report upon a basis of organization, or upon a basis of the fundamental problems will help in its understanding, and will suggest lines of needed activity. On a basis of fundamental problems, the following division is suggested.

Personal, Present Service to the Student

Health Education

Research

Statistical (Regular Session)

Unless well presented, disease statistics are just as formidable to the university layman as they are vital to the proper evaluation of health work. Their presentation should be as simple as possible, and in RATES to make them comparable with groups of various sizes. For each table or series of findings the number of students, male and female concerned, should be given, together with time intervals included. Upon the same basis statistics may be divided:

Personal Student Service

Student Illness and Clinical Service, Including Medical Examinations

	Number			Rates per 1000		
	Men	Women	Total	Men	Women	Total
.....General						
Enrollment (entitled to service)						
Individuals served						
Calls and admissions						
Calls and admissions per student served						
X-ray examinations						
Deaths, total (at and away from university)						
Deaths accidental						
Prescription filled						

²⁶ Forsythe, W. E. Op. cit., pp. 132-134.

Cost of all service (earnings deducted)

Cost of salaries and wages (earnings deducted)

Cost of hospital and infirmary (earnings deducted)

Dispensary

Patients total

Calls total

Calls per day, average

Per call average expense net

Refers to other clinics

Refers to private physicians

Diagnoses

Hours open daily

Days open annually

Room calls

Infirmary

Admissions

Freshmen

Sophomore

Junior

Senior

Graduate

Individual patients

Average days per admission

Average patients per day

Largest number patients in one day

Average expense per patient day

Patient charges per day

Hospital

Admissions

Individual patients

Average days per admission

Average expense per patient day

Diagnoses and other items

List including operations, eye refractions, and special treatments, acute or chronic, indicated where important as in appendicitis, tonsillitis, sinusitis, bronchitis, conjunctivitis, constipation, etc.

Laboratory Analyses

Medical Examinations and Follow-up

a. For entering students

b. Upperclassmen

Tables condensed and summarized, or extended and complete as determined by circumstances.

Physical Education and Exercise

Condensed tables indicating nature and amount of work.

Sanitation

Tabulation of inspections, food handlers examined, etc.

Health Education

Lectures given

Average attendance

Average hours per attendant

Pamphlets or cards distributed

Other items

Research and Other Activities

Statistical Summer Session

Brief summary of enrollment, dispensary and infirmary service.

Diagnoses and such items tabulated in rates.

THE OHIO STATE UNIVERSITY

STUDENT MEDICAL SERVICE

Communicable Disease Notice

....., 193.....

*To the Dean**College of*

MY DEAR DEAN:

1. Dr....., Associate Physician, reports that
....., whose address is
contact
is suffering with
2. He has been sent to
3. The Health Officer of Columbus has been notified.
4. He, she, will probably be absent from h classes for
5. Request he, she, not be admitted to classes without permission of this office.

JAMES S. WILSON, M.D.,
Director

COPY FORWARDED

*Original to go to Dean of student's college**President, The Ohio State University**Dean, College of Medicine**Student**File with clinical record*

NOTICE OF COMMUNICABLE DISEASE. NOTE THE INDIVIDUALS TO WHOM A COPY IS
FORWARDED.

A complete up-to-date health record, accurately filed and easily accessible to all properly qualified officers, should be kept of each student throughout his college life. This card should follow the student to the infirmary or hospital. When discharged, a record of the kind and duration of illness should be made on the card as a guide for advice in resuming physical and academic activities.

Daily Report for the 24 Hours Ending at 4:30 p. m. 193

Dispensary calls	Men	Women	New Patients	Total
Medical cases.....	Surgical.	Respiratory cases		

COLLEGES	CLASSES	OUT SERVICE
Agri	Fresh	UNIVERSITY HOSPITAL
Arts	Soph	X-Ray
C & A.	Jr.	Other
Dent.	Sr	STATE LABORATORY
Educ	Grad	Wassermann
Engr	Total	Diphtheria
Grad		T.B.
Law		Others
Med	NUTRITION SECTION	Remarks
Phar	Overweight	
Vet Med.	Underweight	
Total		

Physician	Student	By Whom	Purpose

[illegible]

Some institutions find useful a health examination follow-up card, containing information as to the student's health classification and an appointment for a follow-up conference.

A card index of remediable defects discovered during the health examination, or records of special conditions, may be designated for convenience by clips of various colors. The punch card system is also recommended.

The proper officials should be notified when students withdraw because of temporary or permanent illness (see the notice on page

OUT CASES—AMBULANT CASES REFERRED TO HOSPITAL PAST 24 HOURS

Name	Sex	Time of Treatment	Authority	Diagnosis

M.D.

HEALTH SECTION

PERIODIC HEALTH EXAMINATIONS

Men

Women

Colleges

Year

Corrective Treats

Remarks

SANITATION SECTION

FOOD HANDLERS EXAMINED

Rejected cases

SANITARY INSPECTIONS

Remarks

Vaccinations

Remarks

LABORATORY SERVICE AT DISPENSARY

Smears

Card. Graph

Blood

B. M. R.

Acidosis

Urine

Sputum

Other

Total

M.D.

M.D.

REPORT OF ACCIDENTS AND COMMUNICABLE DISEASES ON CAMPUS FOR THE 24 HOURS ENDING AT 4:30 P.M. THIS DATE:

Student's Name	College	Diagnosis	Location on Campus	Disposal of Patient	Attending Physician
1					
2					
3					
4					
5					

Copy to

The President

The Dean, College of Medicine

File

Respectfully submitted,

JAMES S. WILSON, M.D.,

Director Student Medical Service.

DAILY REPORT FORM FOR DISPENSARY AND HOSPITAL CASES (Reverse).

107). Daily reports (page 108) of dispensary, infirmary, and hospital cases are believed unnecessary by some, but monthly statements issued in mimeographed form have been found advantageous. House mothers, janitors, or voluntary health officers in fraternities, sororities, dormitories and rooming houses should be required to make daily reports of any illnesses in their respective houses. As a general policy, parents should be notified of serious defects or impairments. In hospital cases of a serious nature notification should be required.

Health Publicity.*—Although very little is gained by promiscuous publicity factual information of the right kind should prove help-

* See Chapter XVIII for a discussion of publicity.

ful. Bulletins, student papers, and monthly reports to interested persons may well be used to call attention to points of hygiene which have particular application at different seasons of the year.

Health Service Standards and Policies.—The following standards and policies, adapted from a previous study,²⁸ are suggested as guides in the administration of the health service program:

The health of the student is the responsibility of the institution.

Health education should include three phases: health supervision of the student environment; health service to students; and health instruction.

Every institution should employ a full-time physician as director of health service. He should be licensed to practice in the community and should also be trained as an educator.

An advisory committee on health, appointed by the president, is recommended.

One full-time nurse for at least every 1000 students enrolled and extra nurses in emergencies should be provided.

Part-time medical and surgical specialists and a trained laboratory technician should be easily available.

Local physicians should be made to feel that the institution is anxious to cooperate with them in providing the best possible health service to students.

The campus health officer should be vested by the county, state, or city with complete power for maintaining the public health on the campus.

The pre-entrance health examination is a valuable, although not an essential, supplement to the entrance health examination.

An entrance health examination should be a prerequisite to matriculation. It may well be given during Freshman week as a part of the routine for registration.

Students with communicable diseases, including venereal diseases, or students who would be a menace to the health of other students should be isolated temporarily, admitted on probation, or excluded from the institution as conditions warrant.

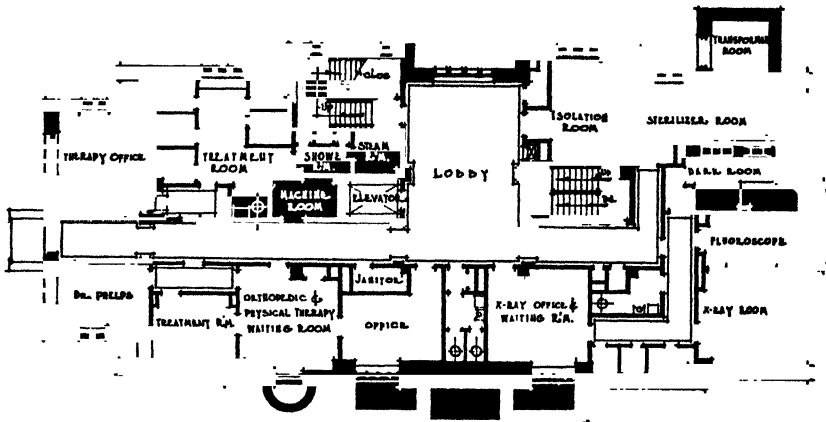
Health examinations should be required of athletes before each sport season, of students who have been absent because of illness, or of any students requested to report for examination by the college physician.

It is recommended that a corps of specialists do the examining by the "army station method."

At least 30 or 40 minutes per student should be given for examination and consultation.

²⁸ Hughes, W. L. Op. cit., Section III, pp. 31-60.

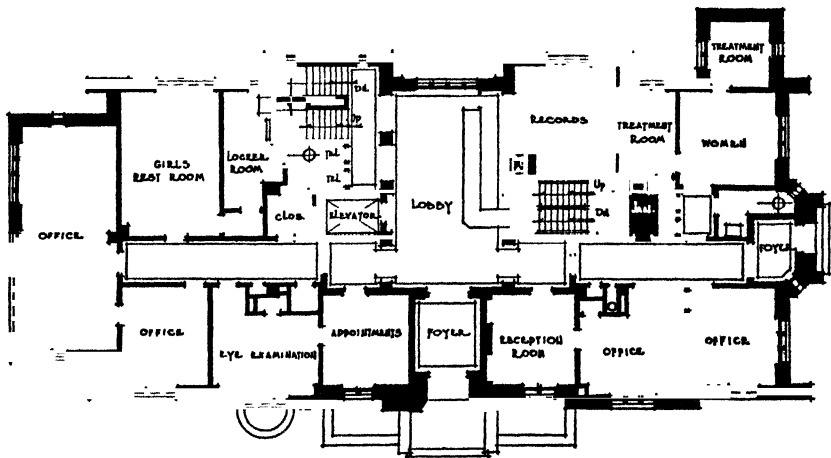
The educational as well as the clinical aspects of the examination should be emphasized.



BASEMENT FLOOR.

SCALE

DEPARTMENT OF UNIVERSITY HEALTH BUILDING AT YALE UNIVERSITY.



FIRST FLOOR.

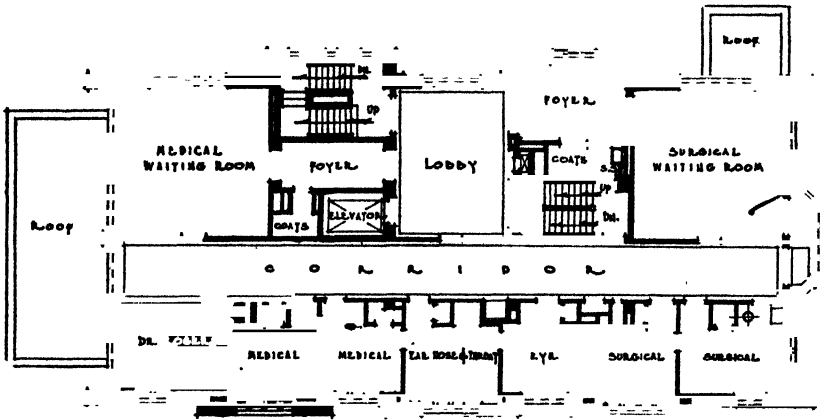
SCALE

0 12 24 36 48 60 72 84 96 108 120

DEPARTMENT OF UNIVERSITY HEALTH BUILDING AT YALE UNIVERSITY.

One physician, preferably the director of health service, should review the complete record of the student, check the whole examination, sum up the advice, give the student an inventory of his condition, lay out a special program, and make an appointment for a later report and conference.

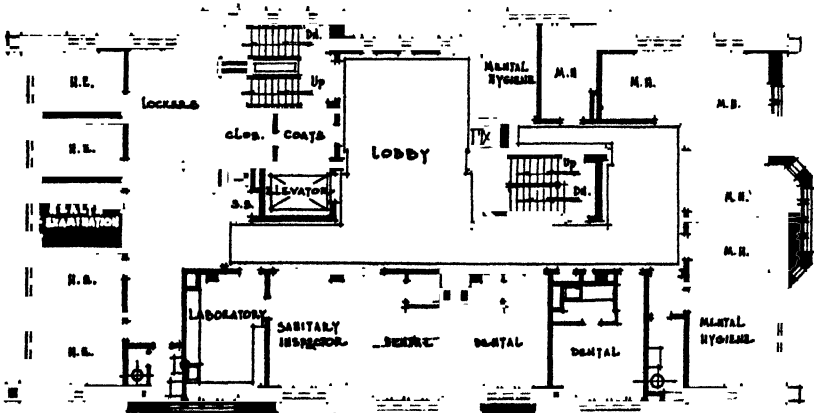
The health service should be responsible for the health supervision of athletes and employees of the institution.



SECOND FLOOR.

SCALE: 1/4\"/>

DEPARTMENT OF UNIVERSITY HEALTH BUILDING AT YALE UNIVERSITY.



THIRD FLOOR

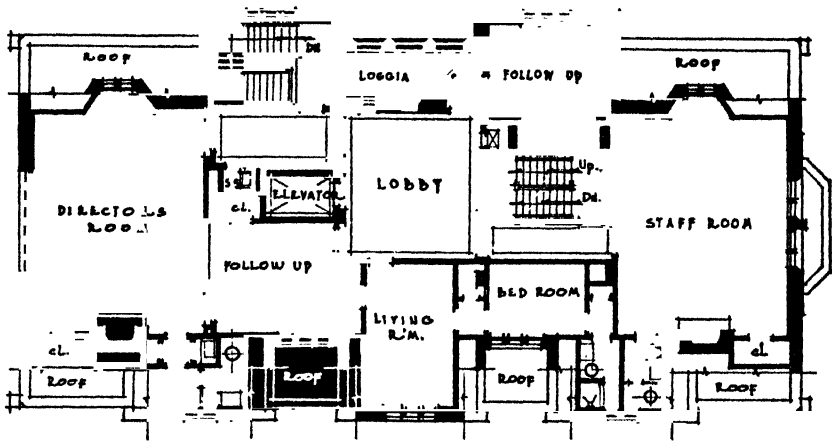
SCALE: 1/4\"/>

DEPARTMENT OF UNIVERSITY HEALTH BUILDING AT YALE UNIVERSITY.

It is suggested that students be classified on the basis of the health examination into at least two groups: those able to carry a normal

academic load, and those able to carry a normal physical education load.

All students, whether defective physically or not, should return to the physician for a follow-up health conference once or more during the year in the order of the urgency of the case.



· FOURTH · FLOOR ·

SCALE: 1/4" = 1'-0"

DEPARTMENT OF UNIVERSITY HEALTH BUILDING AT YALE UNIVERSITY.

Students should be strongly urged to correct all remediable defects.

The amount of medical treatment and hospital care in return for the health fee should be determined and made known to students.

Extensive medical and surgical treatment should not be attempted unless the institution is in position to provide the highest quality of professional service.

Dispensary, infirmary or hospital, and laboratory service should be provided by the institution or otherwise made easily available to students.

Students should be urged to call the health service, rather than off-campus service, for illnesses unless referred by the health service physician.

The same confidential relationship should exist between a student and a physician on the health education staff as between the practicing physician and his patient, except where it is in conflict with the best interests of the student body as a whole.

Individual fees for treatment of students should not be permitted by members of the health education staff.

Communicable disease control should be handled in cooperation with the local board of health and in accordance with the health regulations of the state in which the institution is located.

Vaccination against smallpox should be a requirement for admission, where legal. Where this measure cannot be legally required it should be strongly urged.

Prophylactic treatment against diphtheria, scarlet fever, and typhoid fever should be strongly urged of all students.

Students should be required to have protective inoculation for diseases to which they have been exposed, or when there is a known or suspected case of the disease on the campus, or they should be required to withdraw temporarily from the institution.

A complete up-to-date health record, or unit record system, including all information available covering data pertaining to the individual's physical welfare, should be kept of each student throughout his college life.

Student health records should be accurately filed and easily accessible but held strictly confidential and available only to properly qualified officers.

Parents should be notified of any defects or impairments or serious illness on the part of students.

Annual, and in some cases, daily and monthly reports of dispensary, infirmary, and hospital cases should be made to the proper authorities, as for example, the deans, and director of physical education.

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CHAPTER V

HEALTH INSTRUCTION

Introductory.—Health instruction is used here as that phase of health education which has to do with the formal teaching of hygiene. It would be a narrow view, indeed, which would limit education in health to this part of the program. It has been shown in the two previous chapters how health supervision of the environment and health services both have important and indispensable contributions to make to the health education of students.

The Beginnings.—The importance of health instruction in the colleges of the United States was early recognized. In the first part of the eighteen-sixties, Amherst College established a "Department of Physical Culture" in which the director, among other duties, was expected "to give lectures on hygiene and other topics pertaining to the laws of health and life, including general knowledge of anatomy and physiology."¹ The University of California inaugurated a two-hour, one-semester freshmen course in 1900. Vassar was one of the first institutions to establish such a course as a part of the physical education program. In 1924 Mock reported² that 46 of 131 colleges had required courses in hygiene, and 110 institutions stated that courses were available to students. Storey, in 1927, found³ that 377 informational hygiene courses were reported for 254 institutions. These courses appeared under 185 different titles. By analyzing titles and content he found it desirable and possible to classify these titles under general, individual, group, and intergroup hygiene.

Formal instruction is probably the most important of the phases of health education and yet it is the most difficult to conduct satisfactorily. Hygiene instruction shares the criticisms directed toward all of the traditional methods of education which did not take into consideration important attitudes students exhibit while attempting to acquire an education. Unfortunately, hygiene suffers additional hand-

¹ Rice, E. A. *Brief History of Physical Education*. A. S. Barnes and Company, New York, 1929.

² Mock, H. "Student Health Maintenance." Report of Interfraternity Council, 1924.

³ Storey, T. E. *The Status of Hygiene Programs in Institutions of Higher Education in the United States*. Stanford University Press, Stanford University, California, 1927, p. 37.

icaps because it aims or should aim to develop desirable habits and attitudes as well as knowledge.

Deficiencies in Hygiene Teaching.—Hygiene, as it has been taught in our colleges and universities, has been far from satisfactory. Storey,⁴ Oberteuffer,⁵ and Mead⁶ among others, have recently pointed out some of the defects in health instruction. A list of the more common ones should be helpful.

1. Many institutions have no hygiene courses.
2. There is a common neglect of subjects that deal with family and other group hygiene.
3. Sex and mental hygiene are commonly omitted.
4. The emphasis is often on curative and preventative hygiene.
5. Classes are often too large, and sections per teacher too numerous. (In some of the larger institutions there are as many as 550 students in one class.)
6. Courses are frequently too short, and class meetings infrequent.
7. The lecture system is seldom augmented by other teaching devices.
8. Insufficient student application is expected or required.
9. Methods of measuring student achievement are inexpert and inadequate.
10. Teachers are poorly trained. Physicians are likely to know little about teaching method. The physical educator is often deficient in scientific knowledge.
11. Hygiene instruction has consisted mainly of the teaching of the facts of anatomy and physiology instead of using such knowledge to guide in the development of habits and attitudes.
12. Single phases of health, such as nutrition, or sex hygiene, have been overemphasized.
13. Hygiene has been taught entirely as a separate course.
14. Health is considered as including only matters of physical life.
15. Student interests have not been known or considered.
16. Society's future demands upon the students have seldom been considered.
17. The vocabulary used in teaching hygiene has often been too technical for the college student to understand.

⁴ *Ibid.*, p. 40.

⁵ Oberteuffer, D. *Personal Hygiene for College Students*. Bureau of Publications, Teachers College, Columbia University, 1930.

⁶ Mead, H. T. *A Survey and Evaluation of Personal Hygiene as Taught in the Accredited Colleges and Universities of the New England States*. Teachers College, Columbia University. Ph.D. Dissertation unpublished manuscript.

Administration of the Hygiene Teaching Program.—Health instruction should be the responsibility of the department of health and physical education. Storey found⁷ the most common titles for departments in charge of informational hygiene programs are "The Department of Physical Education," or "The Department of Hygiene" or a combination of hygiene and physical education. While it is clearly recognized that a great amount of informational hygiene may be found in the several subjects or departments which deal directly or indirectly with health instruction, such as bacteriology, biology, botany, physiology, psychiatry, psychology, sociology, and zoology, formal courses of instruction are needed to organize and integrate the materials from the various sources. Each department having anything to do with health should be encouraged to emphasize that phase peculiar to its field.

Staff.—Health instruction should be given by the members of the staff in health and physical education. Such instructors may be physicians, health educators, physical educators, or other persons. In any event they should be especially trained to teach hygiene. The physician-teacher of hygiene, who does not know young people or understand teaching methods will fail just as surely as the coach-instructor in hygiene who knows nothing about the subject. Sundwall⁸ advocates special training for the hygiene instructor in anatomy, physiology; hygiene, bacteriology, psychology, mental hygiene, methods of teaching, sociology, genetics, eugenics, and research. The first seven named unquestionably are essential while the last four subjects are desirable if the instructor is to be adequately prepared. Wood⁹ believes that hygiene instructors should be comparatively young, not too far removed from the students in age and experience. The subcommittee on the qualifications and preparation of teachers of college hygiene of the National Conference on College Hygiene¹⁰ set minimum standards and suggested a program of preparation most likely to provide these qualifications. The committee proposed knowledge of general subject matter, knowledge of special hygiene subjects and techniques of presentation of subject matter, point of view and philosophy of health, personality, and health.

General subject matter which the teacher should acquire includes the basic sciences and general education. Under the former is listed

⁷ Storey, W. A. *Op. cit.*, p. 26.

⁸ Sundwall, J. "Student Health." Chap. XVIII in R. A. Kent's *Higher Education in America*. Ginn & Co., Boston, 1930, p. 550.

⁹ Wood, T. D. "Health Education in Colleges." *Proceedings, American Student Health Association*, 1927, p. 25.

¹⁰ "National Conference on College Hygiene." *Proceedings*, 1931. National Tuberculosis Association, 450 Seventh Avenue, New York.

general biology, anatomy, physiology, bacteriology, chemistry, physics, general psychology, and general sociology. The latter includes principles and philosophy of education and educational psychology and sociology. Special hygiene subjects include general, nutritional, mental, social, community, and child hygiene and first aid. The hygiene teacher should believe not only in the importance of the development of the proper health attitudes among students, and subscribe to the facts pertaining to the prevention and control of communicable diseases, especially immunization, but should also take pride in maintaining a high degree of personal health, cooperate in maintaining and improving community health, and believe in the advancement of state, national, and international health. Moreover, the teacher should be free from remedial defects, possess mature and stable emotions, and, if possible, develop the ability to inspire the confidence that will lead students to return for aid in health problems, and to show sympathetic understanding of students' problems and viewpoints.

The most desirable preparation for the teacher of college hygiene is believed to be the medical course leading to the M.D. degree followed by one or two years additional training in general education and in health education. This training is particularly valuable in the smaller colleges where circumstances often demand that the college physician teach hygiene. For strictly teaching and administrative purposes, and for research, courses leading to the degree of doctor of philosophy or doctor of science in hygiene or related subjects would seem to provide the best training.

Requirements.—The committee mentioned above recommended six semester hours as the ideal time allotment for the required hygiene course. Others¹¹ have advocated a formal course in personal hygiene required of freshmen at least two hours weekly for one semester. This course should be given academic credit on the same basis as the other subjects. Some academicians do not favor the requirement or the credit recognition. Is not personal health as important to the student as English? It is certainly more basic in the life of an individual than a foreign language. The course should be offered as a course separate and apart from physical education. Moreover, credit should be given separately and not combined with physical education. The practice of combining the two for instruction and credit recognition has not met with general approval.

- ¹¹ a. Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, 1932, pp. 61-62.
- b. National Conference on College Hygiene. *Op. cit.*, pp. 65-70.
- c. Sundwall, J. "Health Activities in Colleges and Universities" *United States Public Health Report*, No. 45, Vol. 34.

Organization and Presentation.—Small classes composed of 25 or 30 students as homogeneous in type as possible are highly desirable if health instruction is to mean much in the lives of the students. Such a plan may be too ideal for a great many institutions but, if staff members in health and physical education are secured who have had the training which should be expected of them, small classes are entirely possible. This plan permits individual health conferences between the instructor and each member of the class. There should be no separation between the teaching of college hygiene and the activities of the student health service and physical education. Both divisions should serve as demonstration laboratories for carrying out the principles of hygiene. Results of the health examination may well be used to motivate the discussion in hygiene instruction. The course should deal with various health problems revealed by the examinations. The hygiene teacher will find a thorough understanding of the principles underlying the physical education activity program most helpful.

Group instruction in hygiene, at best, is uninteresting to a large body of students. Formal lectures should be supplemented by individual instruction as occasions arise in health examinations, follow-up health conferences (see the card on page 124), athletic training and competition, and in required or elective physical education activities. The methods of presentation should be informal and varied. Class discussions are desirable. They promote interest and may be conducive to student participation in that phase of hygiene under discussion. Notebooks, term papers, health surveys of home or college communities, health projects, health films, health habit charts (page 123), and special health talks or fireside discussions have all been tried with varying success. Harvard has experimented successfully with fireside talks. Columbia has inaugurated evening health conferences in charge of a different instructor each week. Students are free to arrange individual appointments to discuss any of their health problems. It is also desirable and feasible to augment health instruction by free, authoritative, and attractive pamphlets on many phases of health by voluntary and official health agencies. In some institutions attractive posters and placards on health may be found hanging on the walls of halls and waiting rooms of the dispensary.

All of the above factors should have some influence in improving and maintaining present student health attitudes and practices as well as subsequent health behavior. Mead¹² found that undergraduates, who had taken courses in personal hygiene, believed that fourteen types of instruction, if arranged according to their value in changing

¹² Mead, H. T. Op. cit.

health habits, should be ranked in order of preferences as follows: lecture-discussion, personal conference, guided discussion, physical examination, health examination, lecture demonstration, formal lectures, laboratory experiments, question-answer, diary of health records, research by students, excursions, term papers, and projects.

FRESHMAN HEALTH HABIT CHART

Name _____ Week Ending _____
 Health Grade _____ Posture Grade _____ Motor Ability _____
 Height _____ Weight _____ Optimum _____ Grip _____ Vital Capacity _____
 My remediable defects are _____

	S	M	T	W	Th	F	S
<u>DIET</u>							
No. fresh vegetables							
No. pieces fruit							
Milk							
Glasses of water							
No. meals							
Between meals							
<u>CLEANLINESS</u>							
Kind of bath							
When							
<u>EXERCISE</u>							
Amount							
Kind							
Out-of-doors							
<u>REST</u>							
Retired							
No. hours of sleep							
Rest during day							
<u>CIGARETTES</u>							
<u>POSTURE</u>							
<u>OUTSIDE INTERESTS</u>							
<u>POSSIBLE IMPROVEMENT</u>							

CUT OUT AND HAND IN

BARNARD COLLEGE HEALTH HABIT CHART.

Content of Hygiene Courses.—In hygiene, as in all other phases of the curriculum in modern education, there is occurring a re-examination of content and method of teaching. This has become imperative because of the apparent failure of college hygiene as it has

WELLESLEY COLLEGE
PERSONAL HYGIENE CONFERENCES

Name	Age		Class
Date	I	II	III
Height			
Weight			
Normal Weight			
Physical Defects:			
Habits:			
1. Sleep			
2. Diet—Appetite			
Breakfast			
Milk or Coffee			
Indigestion			
3. Elimination			
4. Baths			
5. Exercise			
6. Posture			
7. Smoking			
Health in College:			
Time in Infirmary			
Illnesses			
Menstrual Periods			
Skin Condition			
Hemoglobin			
Headaches			
Signs of Nervousness:			
Mannerisms			
Worries			
Homesickness			
Emotional Upsets			
Personality:			
Responsive and alert			
Adaptable			
Common sense			
Sense of humor			
Integrity			
Gregarious			
Appearance			
Work:			
Interested			
Note Book			
Quizzes			
Special Interest			
Remarks:			

been taught in the past. Students have been bored and uninterested and have openly avoided the course. Deans and faculties have been unwilling in many institutions to grant credit recognition. As a result what was once believed to be desirable subject matter in hygiene is now being analyzed to determine its relation to the problems of living. Science is replacing tradition in determining content.

Personal Hygiene.—Oberteuffer¹³ determined the elements of content for freshmen courses in personal hygiene by a study of the individual needs for information and the interests and curiosities of the individual.

In the past, two extreme views in the selection of subject matter have been advocated. One believes the basis should be student interest. The other argues for adult needs. According to the best thought of modern curriculum makers neither is fully right nor entirely wrong. A middle ground is recommended. "Adult needs," or the demands of society which must be met later, are presented, in part, in textbooks on personal hygiene, tables on mortality and morbidity, and contemporary literature on health problems, particularly Lerrigo's¹⁴ *Health Problem Sources*. Further study is needed in this field. Oberteuffer presented a description of the student needs and interests. He has listed a long series of questions which were recorded in actual teaching situations in which college students entered into discussions about personal hygiene.¹⁵ These questions undoubtedly indicate a definite need for information. They present excellent material for syllabus making. The uses to which these questions may be put in teaching are listed¹⁶ as follows:

1. They may serve as content material with which to carry on class discussions.
2. The use of such questions enables the instructor to serve very well as guide to the solutions of health problems.
3. The questions indicate to what extent a teacher of hygiene should be professionally prepared in order to conduct classes.
4. These questions may serve as a basis for the making of a syllabus in hygiene.
5. The questions may be used by both students and instructors as bases for assigned work.
6. The questions may be used as part of quizzes or examinations.
7. The questions may serve as additional material to be used in connection with a prescribed syllabus.

¹³ Oberteuffer, D. Op. cit., pp. 21-59.

¹⁴ Lerrigo, M. D. *Health Problem Sources*. Bureau of Publications, Teachers College, Columbia University, New York, 1926.

¹⁵ Mead, H. T. Op. cit., Recorded questions asked by women students.

¹⁶ Oberteuffer, D. Op. cit., pp. 60-65.

The relative value, according to students' judgments, of the subject matter of personal hygiene was also determined. Students rated the topics in rank order of importance as follows: Mental hygiene, physical activity, meaning of health, nutrition, professional health service, prevention of disease, sex and reproduction, skin and hair, mouth, eyes, ears, and elimination. It should be noted that there are discrepancies between the space given to these topics in books and the regard in which the students hold them.

It seems clear that the teaching method accompanying the use of such interests in personal hygiene should begin with specific questions or particular elements of content and work gradually to broad generalizations.

Sex or Social Hygiene.—Social hygiene, in its broadest sense, includes all aspects of social health. The social agencies in the United States, however, have concerned themselves primarily with the problems that center around the family as the basic social unit. These problems have been largely those which have grown out of the sex instinct. The subcommittee on social hygiene of the National Conference on College Hygiene reported the present status of sex education in the colleges.¹⁷ Returns from 111 colleges and universities showed that 105 claim to present some social hygiene material, and 77 present social hygiene with a personal and social interpretation and application designed to promote personal adjustment. Special lectures in social hygiene, averaging six lectures, were reported by 49 institutions, while special courses in the subjects are offered at 8 colleges and universities. Social hygiene, as a part of subject matter in courses of the regular college departments, was reported in 105 institutions as follows: In biology, 53; hygiene, 53; sociology, 51; psychology, 38; physical education, 32; physiology, 26; and home economics, 15. A large part of social hygiene is taught in connection with hygiene and physical education and by far the largest number of students are reached in these courses. The report indicates that with few exceptions, the reactions to social hygiene teaching have been favorable, but most of the instruction has been meager, fragmentary, and uncorrelated.

The important aspects of social hygiene are recognized as educational, legal and protective, and medical. The department of health and physical education should make provision for all three aspects of the problem. Health instruction, however, is particularly concerned with the educational, which should aim to assist students in adjusting personally to the sex factor in life, prepare them for parenthood, and for leadership in social problems of the community.

¹⁷ National Conference on College Hygiene. Op. cit., pp. 47-48.

Institutions which do not teach this important topic to all undergraduates clearly are not serving their students fully. It is desirable that plans be made for reaching the entire student body. This seems most feasible in required courses in hygiene which should include an adequate introduction to sex-education.

Methods of presenting materials will vary in institutions depending upon the content of other college courses. The advisory health committee mentioned in the chapter on organization should be helpful in correlating subject matter. This committee might be composed of the professor and director of health and physical education, college physician, the deans, and perhaps the professors of psychology, and sociology. Personal conferences should augment formal instruction. The evening fireside talks on matters of sex which are conducted at Harvard University were mentioned above. Many agencies should co-operate in promoting this phase of health instruction. Faculty advisers will be involved in guiding sex conduct, librarians should keep selected reading material in the open shelves, health services will need to diagnose, advise, and treat venereal diseases, and non-venereal disorders of the sex organs, and official and voluntary community agencies should be expected to provide a wholesome environment free from undesirable sex exploitation.

Mental Hygiene.—Mental hygiene, too, should be the responsibility of a department of health and physical education. Although the need for it has been recognized for some time it is only within recent years that there has been any appreciable development in this direction. This service has resulted from the attempt of psychology and psychiatry to understand human conduct, and the realization that early life attitudes determine future behavior. The approach is broad and is concerned with what is commonly called personality. In the beginning the program was largely concerned with the abnormal behavior problems of students. More recently the service has sought a more positive constructive influence in directing the conduct of students in their daily adjustments to life situations. At the present time this broad approach has no generally accepted technique of application and few persons are trained to administer it.

Several writers ¹⁸ have indicated the need for a mental hygiene

- ¹⁸ a. Campbell, C. M. "The Responsibilities of the Universities in Promoting Mental Hygiene." *Mental Hygiene*, April, 1919.
- b. Kerns, H. "Management of Acute Mental Hygiene Problems Found Among College Men." *Proceedings, American Student Health Association*, 1925.
- c. Laird, D. "Mental Hygiene of College Students." *Mental Hygiene*, October, 1923.
- d. Cobb, S. "Neuropsychiatric Examination of 1,141 Students." *Journal of Industrial Hygiene*, February, 1922.

service in colleges and universities. Examinations of entering students have revealed that although entering freshmen have few defined problems, an extended personal history is one of the best means of finding nervous instability. (See forms on pages 57-93). Activities in mental hygiene should include lecture courses, and mental hygiene service for individual students.

Lecture Courses.—Courses on mental hygiene, or lectures on the subject, should be in the curriculum of every college and university, preferably perhaps as a part of the course in required personal or general hygiene. It has been recommended¹⁹ that courses in mental hygiene should take one of the following forms:

- a. Orientation courses for freshmen as a part of a general individual help and orientation program.
- b. Elective courses on mental hygiene for undergraduates.
- c. Elective technical courses for graduate students in which mental hygiene is related to their particular professional needs."

There seems to be quite general agreement that no course in mental hygiene should be compulsory, except as a part of the required hygiene course for freshmen. On the other hand, an elective course of from two to three hours per week for one semester for upper classmen has been suggested.²⁰ The committee of the Conference recognized two types of content in courses on mental hygiene, namely (1) content that deals with the social problems that arise on the basis of mental adjustments and the social resources which the community has developed for meeting them; and (2) courses that aim to provide the student with informational content that may help him to solve his own personal problems. It is urged that the second type of content be conducted only by one who has had a broad clinical experience with mental problems, a psychiatrist, and who is cognizant of the dangers and advantages of using the didactic method as a therapeutic instrument. Qualifications recommended are experience in the management of behavior problems in children acquired through working as an integral part of a well organized child guidance unit, experience in the management of problems arising out of family situations, and through familiarity with the contributions to psychiatry of the trained social worker, and experience in modern dynamic psycho-therapeutic techniques.

The committee further recommends a minimum staff of a full time

¹⁹ National Conference on College Hygiene. *Op. cit.*, p. 57.

²⁰ Williams, F. E. "The Development of a Mental Hygiene Program in a College or University." *Proceedings, American Student Health Association*, December, 1925, p. 45.

psychiatrist, and the availability of an organized general health service, psychological service, and social service.

Mental Hygiene Service for Individual Students.—This service should be concerned with the problems which arise out of the individual student's social and emotional life, as he or she attempts to adjust to life situations in college and elsewhere.

In 1925, Yale appointed a psychiatrist to the staff of its health department and began its service in mental hygiene. The number of psychiatrists was increased to four in 1926-27, and two social psychiatric workers were added as well. Quoting from the department bulletin ²¹ "The chief object is to help students maintain a sound mind in a sound body. The endeavor is made to give some insight into the methods by which emotional poise and mental balance may be maintained. Students with physical defects are aided in their efforts to make rational emotional compensations for these defects. Methods of approach to the vital problem of determining the extent to which specific traits of temperament and character, special capacities, and limitations should be permitted to direct both undergraduate and post graduate experiments in living are suggested. Efforts are made to prevent temporary difficulties in living from producing tragic and permanent symptoms of failure.

"With these objects in view, a conference is held with each new student, and opportunity is given to all students by special appointment to discuss any personal problems which may be annoying or seriously handicapping constructive thought or action. There is a clear indication of the importance of taking a definite, sane, constructive interest in the mental life of undergraduates and graduates."

Mental hygiene service may be directed by a specialist, as is done in large institutions, or by the college physician. In every college or university, however, there are deans, psychological counselors, sociologists, physical educators, and other faculty advisers who, because of their interest in individual students, or because of their knowledge of the behavior of young people in social situations, are able to help students in the solution of their personal problems. This assistance is important but it is likely to be casual, fragmentary, and uncoordinated. The staff in health education should be trained to provide a professional mental hygiene service.

The question often arises as to the desirability of securing the services of a psychiatrist. Some contend that a physician, trained in psychology and medicine but not called a psychiatrist, is more to be desired, because the term psychiatrist damns him at once in the minds of many students. Others have argued that there is no need for a

²¹ Department of University Health, Yale University, New Haven, 1931.

mental hygiene specialist, because a vast majority of student problems are minor social and emotional adjustments to be handled by the college physician or a psychological counselor rather than serious mental disorders requiring the services of a psychiatrist.

On the other hand, the dangers involved in a service of this kind conducted by a novice cannot be denied or too strongly emphasized. Institutions in need of advice in mental hygiene matters or in personnel trained in this service should apply to the National Committee on Mental Hygiene²² for assistance.

There is general agreement that mental hygiene service should not be used as a disciplinary agent. It should be clearly distinguished from college administrative and disciplinary procedures, although it will generally cooperate closely with such procedures and with scholastic planning and counseling service and vocational guidance placement.

Community Hygiene.—It is important that the college seek to develop within the individual an appreciation of the health needs of his own community. He should learn the nature and purpose of voluntary and official health agencies. He should know what results have been accomplished and how to measure them. He should be able to determine what constitutes adequate budget, equipment, and personnel for an efficient local department of health. In addition to this knowledge instruction in the required hygiene classes should aim to develop right attitudes within the student to the end that he shall cooperate with health agencies as an individual and support as a citizen the promotion of an ideal community health program.

Summary: Many institutions of higher education in the United States are not providing an adequate education in hygiene for their young men and women. Few leaders are trained in scientific hygiene and fewer still are trained for leadership in hygiene.

The success of health instruction and the broader program of health education will depend upon the extent to which there are produced in students scientific attitudes and habits which will overcome unreasonable health practices and beliefs and eliminate ignorance, prejudice, misinformation, tradition, and indifference. Progress will of necessity be slow and tedious. Young persons are ordinarily not interested in health when they have an abundance of it. Adults frequently become interested after it is too late. Many students come to college with closed and hostile minds due to home training and social experience. Changes in established beliefs in hygiene will be as difficult to attain as change in politics or religion.

²² National Committee on Mental Hygiene, 450 Seventh Avenue, New York City.

If real advances are to be achieved in health instruction, they will come about by means of a personnel well trained to teach hygiene and by establishing a close coordination among the various phases of health and physical education, such as health instruction, health service, health supervision, required physical education and athletic activities, and other health-habit, health-attitude, and health-knowledge forming curricular and extra-curricular experiences of the student.

Administrative Standards and Policies.—A summary of the administration and content of the hygiene courses suggests the following guiding standards and policies:

Health instruction should be the responsibility of the department of health and physical education.

The institution should require of all freshmen a formal course of from two to four semester hours in personal and community hygiene.

In addition to a formal course in hygiene, each department which deals directly or indirectly with health instruction should be encouraged to emphasize that phase of health peculiar to its field.

Preferably, health instruction should be given by members of the staff in health and physical education, but they should be especially trained to teach hygiene. It is essential that hygiene instructors have special training in anatomy, physiology, hygiene bacteriology, psychology, mental hygiene, and methods of teaching. Moreover, it is desirable that they also have training in sociology, genetics, eugenics, and research.

Health instruction should be taught as a separate course, rather than as a part of physical education, and it should be given credit recognition on the same basis as any other academic subject.

A small homogeneous group of 25 or 30 students is a desirable unit for health instruction.

Divisions of health service and physical education should serve as demonstration laboratories for the formal courses in hygiene.

Group instruction should be supplemented by individual instruction as occasions arise in health examinations, follow-up conferences, athletic training and competition, and physical education activities.

Health instruction should also be augmented by special health talks; fireside talks; health films; attractive posters; and by free, authoritative pamphlets on many phases of health by official and voluntary health agencies.

Content of courses should be determined on the basis of student interests as well as on the basis of adult needs.

Some sex education and mental hygiene should be taught as a part of every required course in personal hygiene.

The lecture discussion method of teaching should be used exten-

sively, if possible, and should be supplemented by other methods of presentation.

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CHAPTER VI

THE REQUIREMENT IN PHYSICAL EDUCATION

The Problem.—During recent years physical educators in the colleges have been called upon, as never before, to justify any requirement in physical education.¹ Serious consideration has been given to the advisability of dropping the requirement and the economic depression brought that action about in some institutions. It has been contended that the present policy in many colleges of compelling the attendance of underclassmen in activity programs on a pure *time* basis, while upperclassmen are excused, is indefensible. Forcing students into activities which they do not like, it is argued, will only increase that dislike. Moreover, compulsion violates the fundamental principles of psychology. There is a tendency in institutions of higher learning to reduce requirements. This trend can be traced from the introduction of the "elective system" at Harvard in the eighteen eighties down to the inauguration of the recent plan for freshmen and sophomores at the University of Chicago.

Shall there be a requirement of any kind? Shall the requirement, if any, be in time, capacity, achievement, ability, a combination of these, or on some other basis? Shall certain activities or courses be required or shall there be provided a variety of activities from which students are required to elect? Should some students be required to take physical education while others are excused? If so, upon what basis; time, capacity, skill, habits, attitudes, knowledge, or physical defects: should they be exempt? Should intramural participants and varsity athletes be excused from required physical education classes? What is to be the policy of the institution regarding students with serious physical defects? Are they to be excused entirely? Can the varsity three-letter man, or the students who pass the physical capacity tests or motor ability tests or minimum achievement standards

¹ a. Hughes, W. L. "The Requirement in College Physical Education." *The Journal of Health and Physical Education*. Vol. 5, No. 1, January, 1934, p. 24.

b. Marshall, Violet B. "A Discussion of the Requirement of Physical Education for Women in Colleges and Universities." *The Research Quarterly*, Vol. 5, No. 4, December, 1934, p. 3.

c. Rider, G. L. "Why Have a Physical Education Requirement?" *Proceedings, The College Physical Education Association, 1934*.

set up by the department, benefit in any way by further participation and instruction, or should they be excused to do as they please? If minimum achievement standards are set up should they include knowledge and skills? Should physical capacity or strength tests decide who shall be exempt or should performance tests be given in the form of *general* motor ability tests or as *specific* tests in a wide variety of activities? These are but a few of the questions which the director of every department must answer and present practice shows that physical educators in our colleges and universities have answered them in every possible way. Some of the various plans which are now in use or which have been proposed follow.

- I. No attempt is made to classify students either as to health status or motor ability.
 1. The requirement ranges from none at all to four years and courses are prescribed, or
 2. All students are required to elect within limits.
- II. Students are classified according to *health status* on the basis of a health examination.
 1. Some institutions require physical education only of the C or restricted group.
 2. A number of colleges and universities exempt those students who rate A. The B group are required to take so-called *developmental* activities and the C group are given restricted and corrective activities.
 3. Same as 2 above, except the A group is required to elect.
- III. Students are classified according to *health status* and *physical capacity* or *motor ability* on the basis of a health examination and physical capacity or motor ability tests.
 1. Physical education may be required only of the C or restricted group and those individuals who fail to pass the physical capacity or motor ability test.
 2. Some institutions require all freshmen or all underclassmen to take physical education, but students who rate A on the health examination and pass a general physical capacity or motor ability test are permitted to elect. A definite program is prescribed for all other students.

A Time Requirement.—A time requirement in physical education has long been the type of requirement in vogue in our colleges and universities. Meylan² found (1921) physical education being placed increasingly on the same basis as other subjects with courses prescribed

² Meylan, G. L. "Status of Physical Education in American Colleges." Report of Committee, Society of Directors of Physical Education in Colleges, 1921.

from one to four years and from two to five times per week. He reported required courses for freshmen and sophomore men and women in approximately 140 of the 260 institutions reporting. Some 20 others required physical education for one year. About 25 claimed that four years of physical education was required. In 1927 Storey³ reported that his investigations indicated *required* physical education in curricula of departments of physical education was the commonest recognition of hygiene in any form in colleges and universities.

At that time courses in physical education were required of men students in 108 of 120 colleges and universities, 20 of 25 teachers colleges, 20 of 24 normal schools, 1 of 56 medical schools, 3 of 40 dental schools, all of 7 private schools of physical education and 9 of 101 schools of theology. These requirements were scheduled for women students in 99 of 104 colleges and universities, 28 of 32 teachers colleges, 27 of 28 normal schools, 1 of 50 medical schools, none of 33 dental schools, 6 of 21 nurse-training schools, and all of the 10 private schools of physical education that admit women. Thus, according to the report, physical education was not required for men in only 10 per cent of the colleges and universities and in only 20 per cent of the teachers colleges. It was not required of women in only 4 per cent of the colleges and universities and 12 per cent of the teachers colleges.

Harvard, Michigan, Ohio State, and Princeton are examples of universities which require physical education of freshmen only. Columbia, DePauw, and Oberlin, among others, require it of both freshmen and sophomores, while Pennsylvania has a four-year compulsory program for all students except those in the medical, dental, and veterinary schools. The requirement for the latter group is for freshmen only.

In a series of articles recently appearing on the sport pages of the New York Herald Tribune, Owen⁴ states that, in eight of twenty-one colleges studied, physical education is required of women two years. Adelphi, Cornell, Hollins, Holyoke, Pennsylvania State, Smith, Wellesley, and Wells comprised this group. There is a four-year requirement in seven institutions, Barnard, Connecticut College, Goucher, New Jersey College, Russell Sage, Skidmore, and Swarthmore. North Carolina and Vassar split the difference, demanding three years of work. Radcliffe and New York University require only one year, the former in accordance with Harvard's policy, the latter because of

³ Storey, T. A. *The Status of Hygiene Programs in Institutions of Higher Education in the United States*. Stanford University Press, Stanford University, California, 1927, p. 73.

⁴ Owen, Janet. "Sports in Women's Colleges." *New York Herald Tribune, Inc.*, 1932.

limited facilities. Hunter College requires a year and a half. Sarah Lawrence Junior College, where nearly 100 per cent of the girls take part in athletics voluntarily, makes no specific requirement.

It may be seen that the majority favor the two- or four-year requirements. The "four year" advocates apparently believe upper-classmen need physical education quite as much as freshmen and sophomores and feel that coercion is the only way to assure all the girls the benefits they should have. On the other hand, those favoring a two-year requirement recognize the principle that college students, as older adults, like things better which are not prescribed as duties. Since one of the major objectives of physical education is to develop a play attitude, a genuine, lasting liking for physical education activities which will carry over into after-college life in the form of regular participation, a compulsory policy might act as a barrier to the realization of this objective.

Other studies indicate that about 50 per cent of the colleges have a *time* requirement only, while the other half provide both a *time* and *achievement* requirement.

In spite of its widespread use, the question arises, as to the desirability of a pure time requirement. The answer depends upon objectives. If we can determine what they are, and recognize and measure them when they have been realized, the time requirement no longer serves our purpose. There is probably little or no justification in compelling skilled freshmen to attend classes from which unskilled seniors are excused. Such a policy tends to develop mere "time servers." Since reasonably effective means now exist for determining physical capacity and need, and motor skills, the time requirement in physical education should be supplemented with physical capacity, skill, and knowledge requirements.

The Achievement Requirement.—Doubtless a majority of the workers in the college field will admit the desirability of minimum achievement standards. There is no general agreement, however, about the desirability of requiring students who pass the achievement test to elect some seasonal activity for the duration of the *time* requirement of one, two, three, or four years. A great many institutions, where achievement tests are given, still require those students who pass them, to elect activities until the time requirement is fulfilled. The minimum standards used may consist of the passing of a health examination, a physical capacity test, a general motor ability test, specific skill tests in the various sports, knowledge tests covering principles, rules, technique and tactics, or some or all of these tests in combination.

A plan of some merit would excuse from physical education all

men and women students who show a reasonable proficiency in a majority of the activities generally included in a modern program of college physical education. A minimum requirement of this type should include a fair proportion of team games and individual sports. Unfortunately, this plan is difficult to administer because standardized achievement tests for college men and women have not been developed in many of the aquatic, rhythmic, and sport activities despite random attempts in this direction. Cozens⁵ has already made a contribution in this field and promises more tests as standards are developed. Knowledge tests covering rules, strategy, and technique of play also need standardization. (See Chapter XI.)

Another plan which has gained some approval would excuse from physical education all students who rate *superior* or *above average* on a general physical capacity test or general motor ability test as developed by Rogers,⁶ Cozens,⁷ and others.⁸

The Time and Achievement Requirement.—A very common plan is one in which students are required to take physical education for one or more years, but those individuals who pass the health examination, and a physical capacity test or certain skill or knowledge tests, or a combination of these, are permitted to elect the activities in which they will engage for the duration of the time requirement. In other words, the students who meet or exceed the minimum standards set up by the department are required to elect.

This combination time and achievement requirement is one of the most satisfactory plans at present. Many, if not a majority, of the entering freshmen lack skill in a *variety* of activities. Moreover, it is quite possible that these freshmen might have sufficient ability to pass a general capacity or ability test or specific skill tests and still lack play habits and attitudes and other desirable attributes which a one-, two-, three-, or four-year program might develop. It would be unfortunate, indeed, if students with great strength or better than average motor ability, who were excused from the requirement, failed to participate in physical education in any form. College students are not too old to develop new habits and attitudes, opinions to the contrary notwithstanding. Therefore, a time requirement of at least two years seems justifiable until physical education in the public schools becomes

⁵ Cozens, F. W. *The Measurement of General Athletic Ability in College Men*. The University of Oregon Press, Eugene, Oregon, 1929.

⁶ Rogers, F. R. *Physical Capacity Tests in the Administration of Physical Education*. Bureau of Publications, Teachers College, Columbia University, New York, 1925.

⁷ Cozens, F. W. *Op. cit.*

⁸ Alden, F. D., Horton, M. O., and Caldwell, G. M. "A Motor Ability Test for University Women for the Classification of Entering Students into Homogeneous Groups." *Research Quarterly*, March, 1932. P. 85.

more universal and until better tests are devised. One of the best possible tests of a two-year program, or any program, is the number of upperclassmen who continue to participate after the requirement has been fulfilled.

Advocates of the four-year requirement, particularly in certain colleges for women, believe the last two years should become progressively more elective, subject to the passing of certain achievement tests at the end of the second year.

It is true, the distasteful compulsory feature of a pure time requirement is somewhat removed if students are permitted to elect after attaining certain minimum standards.

Students' Attitudes Toward a Requirement.—The reaction of students, as indicated in the few studies made, favors a requirement in some form. Oosting⁹ found in a study of the opinion of men graduates of Amherst, Bates, Bowdoin, Hamilton, Haverford, Trinity, Wesleyan, and Williams that 77 per cent favored a rule requiring each student to show some knowledge and proficiency in at least one indoor and one outdoor "carry-over" * sport. Ninety-one per cent believed that physical education should be required of all college students. Of the 91 per cent favoring the requirement 6.5 per cent believed it should be for one year only. Twenty and one-half per cent indicated that two years should be required. About 21 per cent advocated a three year requirement while *51 per cent would require physical education of all students for four full years.*

On the other hand, college physical educators are aware of certain factors in the required program which are unattractive to college students. Alden¹⁰ made a study of the factors in required physical education which are least attractive to the college girl. The ten factors that have the tendency to be of greatest influence in helping to establish unfavorable attitudes toward physical activity are reported to be:

1. Inconvenience of dressing and undressing.
2. Insufficient time for dressing with a resultant feeling of untidiness.
3. Failure of the secondary schools to develop elementary physical skills beyond the novice state.

⁹ Oosting, R. "A Study of Graduate Opinion on Physical Education and Athletics for Men in a Selected group of Small Colleges." Report at the Round Table Discussion on Intercollegiate Athletics. College Physical Education Association, 1931. (Unpublished.)

* A "carry-over" sport is one that can be played throughout life after graduation from college.

¹⁰ Alden, M. A. "The Factors in the Required Physical Education Program That Are Least Attractive to the College Girl." *Research Quarterly*, December, 1932, p. 97.

4. Insufficient time allotted to each activity to develop skill in any one activity.
5. Compulsory participation in activities in which there is no interest.
6. Varying degrees of skill in each class.
7. An antagonistic feeling toward the required program of physical education.
8. Lack of time due to outside employment.
9. Large classes.
10. No credit.

Smith ¹¹ reports a questionnaire study in regard to the attitudes of men students toward the required physical education program, after replacing the formal program with informal activities. Approximately 500 men, or 72 per cent, learned recreational activities they had not known before. Ninety-four per cent, 615 students, stated that they enjoyed the course and 91 per cent, or 506 students, believed they were benefited by it. Moreover, 62 per cent stated that it would not be a wise plan to offer the course as an elective rather than as a requirement. This answer is borne out by the fact that 65 per cent of the group stated that the course would not have been taken had it been offered as an elective without credit. The activities would not have been learned by 56 per cent of the group if they had not been offered in class. The students made the following suggestions for the improvement of the program:

1. Longer Periods—two hours.
2. Greater freedom in the election of activities.
3. Better teaching and officiating.
4. No hygiene lectures.
5. No volleyball.
6. More tournaments, leagues, etc.
7. A two-, three-, or four-year requirement.
8. The opportunity to elect physical education instead of military drill.

The Need for Achievement Norms.—If minimum achievement standards are to be required, what shall they be? If certain courses are required, what shall be the course content? The answers to these questions are presented fully in subsequent chapters. It will suffice

¹¹ Smith, W. R. "A Questionnaire Study in Regard to the Attitudes of Men Students Toward the Required Physical Educational Program." *Research Quarterly*, March, 1933, p. 247.

here to state that reasonably accurate tests and measures of health, fundamental skills, and knowledge are available. It is true they have lacked standardization on the college level, but norms are now being developed.*

Glassow's Classification of Requirements.—Glassow¹² divides requirements into two classes; first, specific skills which will contribute to the well-being of any individual, and second, general habits of response or fundamentals of physical education. In the first group are included (1) the ability to participate with average skill in one or more of the recreational activities common to life today—swimming, tennis, golf, etc., (2) ability to assume the type of body posture which the individual might consider desirable, and (3) specific abilities relating to team games and rhythmic skills. In the second grouping are included (1) the development of kinesthetic perception to such degree that each individual will consciously use it, (2) ability to observe and to visualize in terms of time elements, or rhythm, and (3) the acquisition of and ability to use knowledge of the laws of physics as applied to body skills.

A Group Requirement.—Barnard College has set up a group requirement in order that a student may not narrow her field of interest too soon, and in order to assure her a broad motor experience with varied types of activities. In terms of accomplishment each student is expected to achieve *AVERAGE* ability in rhythmic activities, team games, individual sports and games, and swimming. *Average* ability in these activities has been determined for Barnard girls.

Athletes and the Requirement.—A question frequently asked has to do with the desirability of waiving the requirement in the case of varsity athletes, intramural participants, and students assigned to the restricted group. If our program is worthwhile it is important that no one be excused from the requirement. Varsity athletes, who cannot meet the minimum standards, should report back to required classes after the sport season is completed and until such time as they can pass all tests. Without such a policy a varsity tackle, upon graduation, might still be "physically illiterate." Furthermore, the intramural program should supplement rather than supplant the instruction in required activities. It is a mistake to suppose that one replaces the other. Aimless and voluntary competition in intramural sports without careful supplementary instruction regarding skills and appreciations in the required program seems as unfortunate as promiscuous reading without any kind of training in the skills and appreciations in-

* The work of Cozens and Neilson, and Messer are examples.

¹² Glassow, R. "Basic Considerations in Planning the College Program for Women." *Research Quarterly*, May, 1930, p. 116.

volved in reading. Substitution of intramural contests for regular class attendance may be permissible if the former are final games of special importance but this practice under ordinary circumstances is to be discouraged.

The Physically Handicapped Student and the Requirement.—Finally, it seems clear that the handicaps of students in the restricted group are seldom, if ever, so great but that such individuals can acquire an understanding of the defect, and some skill in games and exercises suited to their particular condition. Rarely, should such an individual be excused entirely from the requirement.

Summary.—Ideally, the entering college student should be tested and classified according to: health status, health habits, attitudes, and knowledge; general physical capacity; general motor ability; specific skills in the various activities of the program; knowledge of rules, technique and tactics; recreational habits; and attitudes regarding play and sportsmanship, and passing all these, he should be considered sufficiently educated, physically, to be excused from the requirement. Failing any one or all, he should be required to improve himself until the deficiency is removed and all requirements are met. Such a plan may now be approximated, but it cannot be fully realized until certain tests are available. At present, the required program provides physical education to the unskilled who have no opportunity to participate in intramural or intercollegiate athletics.

It is clear that the requirement in college physical education should be based upon something more than putting in time. Interests, capacities, and needs of college men and women should be considered. Minimum standards are desirable, and where lacking, should be speedily developed.

A modern institution of higher learning should aim to develop the "whole student." Every college or university *requires* a program of *intellectual* education with certain electives provided. It is just as logical to *require* a program of *physical* education with certain minimum standards expected and with certain choices of activities permitted.

Proposed Standards.—Suggested standards having to do with the requirement in physical education are listed below.¹³

A combination time and achievement requirement is recommended.

Minimum standards might include the passing of: a health examination, a physical capacity or strength test, a general motor ability test, performance tests in the sports and other activities, knowledge tests, or a combination of some or all of these tests.

¹³ Marshall (op. cit.) lists arguments for and against the requirement in physical education and suggests procedures for meeting local issues.

Minimum requirements in the department might well include certain proficiency in swimming, in at least two highly organized team games, and in two or more of such individual sports as, tennis, handball, squash, golf, bowling, and archery.

Varsity athletes, who cannot meet the minimum standards, should report back to regular physical education classes after the sport season is completed, and until such time as they can pass all tests.

The voluntary intramural activities should supplement rather than supplant the required instructional program.

With rare exceptions, any physically handicapped student who is able to attend college should be required to take physical education of a restricted or rest type.

Physical education classes should meet at least three times weekly.

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CHAPTER VII

ORIENTATION IN PHYSICAL EDUCATION FOR COLLEGE FRESHMEN

The Need.—Due to the narrow but prevalent view that physical education is mere exercise, activity classes in the colleges have often been little more than exercise periods. Tradition, the human tendency to avoid change, has frequently prevented progress in practice, even though the principles and purposes of physical education have broadened tremendously. Many of the so-called subjects in the college curriculum, particularly the sciences, include laboratory courses. Physical education has been quite generally classed as a laboratory course and conducted solely as such. But the science courses do not consist entirely of laboratory work. In addition, text books, term papers, reports, lectures, class discussions, recitations, tests, and examinations are provided. Science is taught in relation to its background, purposes and values.

Contrast this with the method of physically educating college men and women in many of our institutions of higher learning. Students register and are told that physical education is a requirement. They obtain towel and uniform and report at the proper time and place. From the first day on throughout the semester and the entire year they engage in formal exercises or participate in a play program depending on the past training of the instructor. There may be instruction in technique, or the teaching may consist almost entirely in "whistle blowing." Little or nothing is given the students regarding the history and aims of physical education or of the values to be derived from it. Many students leave college with little knowledge of the great physical education movement which has grown so rapidly since the World War. Great numbers of college graduates look upon physical education as exercise, and they participate in big-muscle activities merely for "a work-out." This attitude toward physical education on the part of so many graduates indicates the need for an orientation course for undergraduates and it has led an increasing number of physical educators to believe that the practice of physical education should be enriched by useful subject matter.*

* Hughes, W. L. "Orientation Courses in Physical Education for College Freshmen." *The Journal of Health and Physical Education*, Vol. 5, No. 10, December, 1934, p. 22.

In recent years there has been a very definite move to provide orientation or introductory courses in physical education. In an attempt to determine the purpose and content of these courses in the various institutions, to discuss advantages and disadvantages, and finally to crystallize thought regarding their real worth, a section meeting of the College Physical Education Association was devoted to such discussion at a recent national convention of the American Physical Education Association.¹

Types of Orientation Courses.—It was found that orientation courses are commonly offered as one of four plans:

1. General orientation courses of which physical education is a part.
2. Orientation or introductory courses for professional students majoring in physical education.
3. Introductory courses designed to prepare general classroom teachers to teach physical education.
4. Orientation courses in physical education for all freshmen.

The first plan apparently has not been tried extensively, nor has it proved satisfactory in all cases. It is likely to consist of a few lectures or one lecture as a part of the program of "Freshmen Week."

The second and third plans are now considered not only a desirable but an essential part of all modern major programs for professional students in physical education and for general classroom teachers who must teach physical education. These courses ordinarily cover such items as the history and meaning of physical education, objectives, scientific basis of the program, and a vocational analysis of the field.

But it is the fourth plan with which we are primarily concerned here; that is, an orientation course in physical education for all college freshmen. This plan, too, has assumed many different forms. It may consist of an "Orientation Week Intramural Sports Program" rather than a required course. Kentucky, Michigan, Minnesota, Oberlin, Ohio State and other institutions organize intramural competition during "Freshmen Week." In many cases attempts are made to acquaint the entering students with the physical education facilities and introduce them to the staff members. It may consist of one required course or several courses. It may range in time from one period devoted to a lecture on orientation to four years of various required courses. It may be called orientation or it may be termed an introduction to, or fundamentals in physical education.

¹ College Physical Education Association Section "Orientation Courses in Physical Education for College Freshmen." National Convention of The American Physical Education Association, Louisville, Kentucky, April, 1933. W. L. Hughes, Chairman.

Fundamentals in Physical Education for Women.—Within the last few years certain college women physical educators have been experimenting with what they call "Fundamentals in Physical Education"² in answer to the question as to what should be included in the required program. There is a feeling that certain skills AND KNOWLEDGES should be provided. There is lack of agreement as to whether this subject matter should be presented and experienced in a special course or given in connection with other activity classes.

The purpose and content of the course in orientation or fundamentals at Oregon State College is so admirably presented by the chairman of the department for women in a letter to the writer that its contents are given here:³

ORIENTATION COURSES AT OREGON STATE COLLEGE

Corvallis, Oregon

"I have selected a brief history of our experience with the course in Fundamentals as the best means of conveying the staff opinion concerning the value of our own orientation course. Three of the members now teaching here have worked with the course since its inception seven years ago, one member for six years and the fifth member for three years.

"In 1926 when we began the development of a course in fundamentals in physical education in the Women's Department, we had a very favorable physical education requirement,—four periods per week Freshman and Sophomore years, and two periods per week Junior and Senior years. In all, the student acquired nine credits in physical education. The fundamentals course was arranged to cover two periods per week throughout the Freshman year, thus to make one-half credits of the nine credits required.

"In developing the course the predominating idea was to make the exercise and knowledge relate closely to a person's every-day life. By means of demonstration, specific exercises and information about the structure of the body, we tried to show the efficient and aesthetic use of the body. We hoped to make our students aware of normal and abnormal positions and functions and to inspire them to desire that which we considered good.

"A further purpose of the course was to bring to a workable level the skills and knowledge of students who had come to college from very different backgrounds. Many of our students have very limited physical education experiences, others quite varied.

"We also desired that they should know how to meet efficiently situations arising outside of their body,—how to lift a heavy object from the floor, how to carry a heavy object balanced over one shoulder, how to dodge a moving object, how to keep one's balance, how to descend a ladder in case of emer-

² Glassow, R. *Fundamentals in Physical Education*. Lea and Febiger, Philadelphia, 1932.

³ McAllester, Laura C. Letter dated April 21, 1933.

gency, how to fall with as little injury to self as possible and how to resuscitate a person following drowning or asphyxiation.

"We desired that they should see and feel rhythm in things about them, both in line and movement; that they should appreciate that the rhythmical way is usually the efficient and pleasant way.

"The course also aimed to teach the fundamental movements of many sports, such as catching large and small objects; catching balls coming from above the waist or from below the waist with the hands; the principle of striking with bat or with the hand, of throwing small or large objects, of aiming at small places or large.

"To the extent that this course related directly to the business of living, whether for play or more serious purposes, it is an orientation course, and to some extent it served as an orientation course in the choice of elective physical activities. If a student had found herself deficient in a feeling for rhythm, she might choose courses to develop that feeling or she might avoid such courses as much as possible. If she could never hit a baseball as it neared her bat, she might choose to develop that skill or she might avoid baseball as an elective sport and so on choices might be made through other sports for which basic skills had been taught. However, for the most part, the course is valuable for that which the student may take and build into her daily life, for that which may become an integral part of her being.

"As I look back over the period of six years, the results of our teaching of the course have never been wholly satisfying. It has been a difficult course to motivate, although we have been able to give better than fair objective tests. Our severest criticism has been that it embodied too much material for the time allotted to the course. The informational side was usually well grasped, but the skills were less surely mastered.

"Doubly did we feel the lack of sufficient time to acquire various skills when, in the fall of 1932, the four-year requirement in physical education was changed to a two-year requirement.

"This meant a balancing in our minds of the values of the fundamental course against the benefits of greater or less participation in various forms of sports, dancing and swimming. The decision was to give the fundamentals course, with a slight cut in course content, in one term,—twelve weeks, three periods per week. At the end of the term we felt more than ever that there had been insufficient time for acquiring skills. We still believe that the course embodies fundamental ideas of information, skill, and appreciation which are valuable to young women and which they probably will have no other opportunity to acquire. Therefore, we propose to teach the basic skills of sports such as throwing, catching, dodging, running, and so forth, when the skill is an integral part of the sport being taught, and to teach the fundamentals of rhythm and of body control as a distinctly orientation course. This course is to be a two-term required course."

One institution provides a regular health and physical examination for all entering freshmen women.⁴ Students who rate A on the

⁴ College Physical Education Association Section. Op. cit.

examination are given knowledge tests on health and skills. Those who attain the minimum standards determined for the tests are exempt from participation for the first quarter in the activity passed. Students are expected to meet certain minimum standards in: one individual sport, one team game, health habits, health attitudes, health knowledge, rhythmic activities, and the fundamental skills—running, jumping, throwing, climbing, and vaulting.

Grades at the end of the course are based largely on the test given at the completion of the course. The correlation between results of written tests and students' final grade after completion of the course on the one hand and motor ability on the other is not high.

Orientation Courses for Men.—Howard⁵ has developed the following orientation course for junior college men:

OUTLINE OF ORIENTATION COURSE GIVEN TO ALL FRESHMEN IN SETH LOW JUNIOR COLLEGE

"Purposes:

1. To present and discuss the reasons for the physical education requirement.
2. To discuss the program of physical education in Seth Low; and to compare the purposes (objectives) of this program with the objectives of the program of the field of physical education.
3. To discuss the intercollegiate athletic program in relation to the objectives of physical education in order that a group of alumni familiar with the features of a desirable athletic program may be the result.
4. To supplement the teaching program carried on in the gymnasium.
5. To create an appreciation of the various outcomes of participation in desirable physical activities.

Content of Course: General Topics.

1. History of physical education and intercollegiate athletics.
2. Principles of physical education. (Brief and simplified discussion.)
3. Methods of learning motor skills.
4. Evaluation of various types of motor activities.
5. Values and methods of training.
6. First aid.
7. Strategies and skills of activities taught in own program.
8. The way to watch an athletic contest.
9. The way to read a sport page.

Length of course: 16 weeks; 8 weeks each semester, 1 period each week.

—Required of all Freshmen:

Textbook: Williams and Morrison—Textbook of Physical Education.

Terminated by a written examination (True-False), (Multiple Choice)."

⁵ Howard, Glenn: Director of Physical Education Seth Low Junior College, Brooklyn, N. Y. (Letter to the Author.)

Pennsylvania State College has an excellent plan in which freshmen are required to take physical education three hours per week. Two hours of this time are devoted to practice and one hour each week throughout the year is given over to orientation, or theory, in physical education. Twenty-three different activities are covered during the freshman year.

Advantages and Disadvantages of Orientation Courses.—Various arguments have been advanced for and against orientation courses. Some of the arguments for these courses have been mentioned above, such as the need for a knowledge of the background of physical education, the importance of certain attitudes toward play, and the desirability of a panoramic view of the field that would widen the understanding and quicken the appreciation of the place of physical education in the general scheme of education.

The value of such devices as textbooks, discussions, notebooks, reports, and knowledge tests in improving knowledge and skill in physical education activities has been tested and found of great worth. This is almost universally true of football teaching. In this sport there is tremendous pressure to acquire the highest degree of skill and knowledge. Almost every coach holds discussion meetings with his squad. Practically all successful coaches require their teams to study the rule book and a large number certainly advise the players to read standard books on the game. It is not at all uncommon to require a notebook. Its contents may consist of a chart and analysis of games, photographs of men in action, solutions of problems in strategy and similar material. Since all coaches employ these methods in some form or degree it is fair to assume that the devices are valuable in developing interest, knowledge and understanding, and skill in the activity. It seems fair, also, to assume that the same devices could be used to the same advantage in connection with other physical education activities. As a matter of fact they have been so used in a wide variety of activities, required and varsity. Psychologically, such analysis of history, nature, purpose, form, and values in activities are essential for efficient learning.

Doubtless there is a place for text and reference books enriched by useful subject matter, written in an interesting style, and in non-technical terms, about the things in physical education of real interest to young people. If text and reference books are to be assigned, topics should be "live" materials and not a dull recital of disconnected bits of information. There are ample reference books available while recently there has appeared a textbook written expressly for students,⁶

⁶ Williams, J. F. and Morrison, W. R.: *A Text-book of Physical Education*. W. B. Saunders Company, Philadelphia, 1931.

and certain texts written as introductory courses for professional students and prospective teachers.^{7, 8, 9}

Note books or syllabi have been considered a part of some required courses in physical education. Where used they have consisted of such items as a report of the health examination; a personal health chart, provided this is not a duplication of the hygiene assignment; clippings and pictures on health, posture, shoes, feet, clothes, sports, current trends, etc.; or topics of special interest to the student, such as swimming, dancing, or athletics.

Reference books include books on rules, technique and strategy of various games and sports, history and principles of physical education, administration of games and meets, play days, etc. Knowledge tests, as an additional basis for grading, are now commonly used.

Arguments opposing orientation courses or devices designed to supplement the activity program deserve careful consideration. In the first place, in many institutions no credit is given for physical education, or it is granted on the basis of laboratory credit. There is some danger of antagonizing the students by imposing too much work in relation to credit. Secondly, in many colleges the activity periods are so limited there is little time for lectures, discussions, and reports. Comparatively few students have received an adequate training in the public schools. Many of them have neither experienced a variety of activities nor have advanced beyond the novice stage in skills in activities. Thirdly, there is the opinion that we should not attempt to introduce methods and materials demanding considerable mental activity into a program designed to relieve students from mental strain. Excellent students, it is argued, the ones who over-concentrate on studies, are likely to be the ones who will concentrate most on the intellectual content of the course in physical education. This would counteract many of the values claimed for physical education. Moreover, the so-called motor-minded students might be turned against activities by the attempt to inject too great an intellectual element into it.

Orientation and Guidance.—Guidance in some form or another has existed since the beginning of our secondary schools. Guidance, originally aimed to distribute young people as effectively as possible to vocational opportunities. More recently it has been enlarged and broadened to help students make the optimal adjustment to educa-

⁷ Glassow, Ruth., *Op. cit.*

⁸ Nixon, E. W. and Cozens, F. W. *An Introduction to Physical Education*. W. B. Saunders Company, Philadelphia, 1934.

⁹ Sharman, J. R. *Introduction To Physical Education*. A. S. Barnes and Company, New York, 1934.

tional situations. Orientation is a form of guidance. If teacher-guidance regarding health and physical education is to become self-guidance on the part of students, the latter must learn something of the benefits to be derived from participation in physical education activities. Each student should learn of the four-fold developmental possibilities in physical education, namely: development of organic systems, heart, lungs, nervous system, etc., development of skills, both team skills and individual sport skills which can be used in leisure time throughout life; development of play habits and attitudes; and development of right conduct. Every college man and woman should realize that if one is to achieve proper organic development one should not over-participate or under-participate. College freshmen should know that it is unwise to participate in vigorous activities without a thorough health examination or when in poor physical condition. Students need to learn the physical, mental, recreational, social, and emotional value of play and play habits and skills. The physically handicapped need to learn of the benefits of a modified and restricted program. They, too, need organic development; play habits, skills, and attitudes; and the social learnings that come through team play.

An orientation or an exploratory course in physical education as a part of or supplementing the activity program will assist students in discovering interests and capacities. In addition, material of this type will enrich the educational experience of students.

Three Views.—Those individuals who believe an orientation course should be a theory course for the presenting of an overview of the great physical education movement would teach the students something of the history, nature, and purpose of physical education and the benefits to be derived from participation in its activities. A second group would not consider a lecture course inasmuch as orientation is looked upon as the opportunity to participate in a wide variety of activities. The writer is in accord with a third group, which would include both theory and practice, and supplement the activity program with text and reference books, articles, reports, discussions, lectures and tests. This type of work must be kept subordinate to the practice of activities, or an uninteresting academic type of physical education may result.

It is apparent that an increasing number of physical educators in the colleges and universities believe orientation of freshmen in physical education is desirable and should permeate every required program. This was the unanimous opinion of one group¹⁰ which gave considera-

¹⁰ College Physical Education Association Section. *Op. cit.*

tion to the question. But just what the nature and content of such course or courses should be is not so easily answered. All are agreed that something should be offered in addition to technique. Workers in the field should continue to experiment with various types of courses. If the institution still maintains a time requirement, certainly a portion of that time might well be spent learning something of the rich background of physical education. If the department is so advanced as to have minimum achievement standards a certain amount of knowledge regarding the history and principles, objectives, values, rules, technique, and strategy of physical education activities might well be one of the requirements. Such requirements have been attempted with more than average success.

Physical education, like the sciences, should be more than a mere laboratory course. Its contents should be so enriched with worthwhile subject matter that college men and women will become intelligent with reference to the physical activities which play so large a part in their living. To this end the physical educators in our colleges and universities should address themselves.

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CHAPTER VIII

ORGANIZATION OF REQUIRED CLASSES

The Importance of Organization.—The director or instructor of college physical education who would not be constantly troubled by administrative details in the conduct of classes must develop a systematic routine procedure to facilitate this work. Organization, a certain amount of system, is essential for efficient teaching. Very little or no administrative ability was necessary in the conduct of formal activities of former years. At a certain hour in the day students reported to the teacher for instruction. They were required to furnish their own uniform and towels. Individuals of varying health status and abilities were placed in the same classes. All were given the same instruction. There were no options or elections, no classification of abilities, no tests. Schedule making was not a problem. Size of classes made little difference. Few instructors were needed.

Today the problem is not so simple. Registration procedure, the organization and size of classes, classification and achievement tests, basket systems, attempts at more scientific grading and a host of other comparatively recent innovations have so complicated the situation that careful planning is now of real importance.

Registration.—The health examination should precede the registration for physical education. Bulletins of information or cards indicating procedure (page 155) should be placed in the hands of all entering students when they arrive on the campus. An appointment for the examination may well be made in advance by the registrar, or other official, who notifies the candidate for admission by mail the exact time and place to appear. This plan, however, is not always feasible in the larger universities. Freshmen week is an excellent time to give the health examinations, which in many institutions is now considered as a part of the routine for matriculation. Registration should not be considered complete until the health examination is taken and passed.

One of the purposes of the entrance or annual health examination as stated in a previous chapter (Chapter IV) should be to prevent students from entering into physical activity which would menace

KEEP THIS CARD

PRINCETON UNIVERSITY

DEPARTMENT HEALTH AND PHYSICAL EDUCATION

This Card Is for the Information of Students Entering in 1934
Please Read It All Carefully

Name in full.....

PHYSICAL EDUCATION APPOINTMENTS

1. You will report at the gymnasium (Date).....Time.....
for Physical Examination, Physical Efficiency Test, and Swimming and Life Saving Test. (Wear rubber-soled shoes, jockey strap and running pants.)

2. You will report for squad work inat
on the following days: Monday, Tuesday, Wednesday, Thursday, Friday. Beginning October 1.

Secure your locker combination from janitor today.

There is no fee for locker but a deposit of one dollar is required for towels. This deposit is refunded upon return of towel and deposit receipt.

Your locker number is

(OVER)

REGISTRATION FOR PHYSICAL EDUCATION

All Freshmen must register for required exercise in some squad or class which meets at least three hours a week. Consult bulletin board in Gymnasium for schedule.

The college year is divided into three seasons as follows:

First Season—October 1 to November 24

Second Season—November 26 to March 9

Third Season—March 11 to May 18

During the final week of each season everyone must register for work for the succeeding season.

Work in the various classes and squads will be started promptly at the beginning of each season.

GROUP CLASSIFICATION

All Freshmen will be classified at the beginning of the year on the basis of: physical condition as shown by medical examination; record in Physical Efficiency Tests, including swimming. Each group will be assigned to appropriate work, that is, elementary swimming, elementary, intermediate or advanced physical training or competitive athletics.

Those men who fail to pass the Swimming and Life Saving Test will be required to take elementary instruction in Swimming at once unless given permission to defer.

ABSENCES

1. Due to sickness or other physical disability will be excused upon application at the medical office in the gymnasium within twenty-four hours after the student returns to his University work.

2. Unexcused absences will be reported to the Registrar and charged against the student's University allowance of cuts.

MODIFICATION OF PROGRAM

Modification of the physical education program for other than medical reasons cannot be made except in consultation with Mr. Nies.

THIS CARD CONTAINS INFORMATION REGARDING REGISTRATION TO ENTERING STUDENTS. (Front and reverse.)

health. A health rating should be given to every student. On the basis of this examination it has become the practice to divide the students into from two to five groups. Ratings are recorded in the capital letters (A, B, C, D, E), and classified according to physical fitness for physical activity. In institutions where five classifications are made A indicates unlimited activity; B denotes unlimited activity with observation, or developmental activity; C means restricted and corrective activity; D calls for reconstructive activity; and E rating excuses from all activity. (See page 68.) Another common classification is illustrated by the West Virginia form, page 157, which rates class I students, Excellent; class II, Good; class III, Restricted; and class IV, Very Restricted.

Some college physicians have stated that they believe it impossible and impracticable to make such fine distinctions in classification. They would classify in only two groups: those students who are without significant physical handicaps, and those who should be restricted because of limitations revealed by the health examination.

A recent study¹ indicates that the most common classification is A, B, and C.

Classification Tests.—Students rated as A, or A and B on the health examination should be classified according to motor ability, or physical capacity. (See form, page 157.) Tests for such classification are presented in a subsequent chapter. Students rated as C should be placed in a restricted and corrective physical education program. This is also discussed in a subsequent chapter.

Organization of Classes.—Ideally, the size of physical education classes should vary with the activity, and provide one or two more individuals than the activity calls for. In too many situations size of class depends upon space and instructors available. If the size of the group must remain permanent for a long period of time the number of individuals in it might well approximate a multiple of 10 or 12. Ten or twelve is a convenient number for two basketball teams, or one baseball or speedball team. Although studies are greatly needed to determine the optimum number of students per instructor the figure is probably around 25 or 30 and of course will vary with the activity. Classes should meet at least three times weekly. Periods at least one hour in length are desirable so there may be at least 30 or 35 minutes for activity with 10 minutes for changing classes and 15 to 20 minutes for dressing and shower. The bath should be a part of the regular physical education period.

¹ Hughes, W. L.: *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1932.

Date.....

Mr.:

Your Medical Rating Is.....

A—Permits you to participate in all forms of athletics.

B—Permits you to participate in all forms of athletics except

C—Permits you to participate in

..... only.

D—Debars you from all forms of exercise.

Remarks

UNIVERSITY MEDICAL OFFICE
Department of Physical Education

BROWN UNIVERSITY HEALTH RATING FORM.

Medical Examination Rating
Class I—Excellent
Class II—Good
Class III—Restricted
Class IV—Very Restricted

WEST VIRGINIA UNIVERSITY

SERVICE PROGRAM FOR MEN

Do not destroy this card

As a result of your medical examination you have been placed in Class
are

This indicates that you qualified to try for an athletic team without
are not
special permission. If you have been placed in Class A or B you may now take
the Physical Achievement test.

Physical Achievement Test: Obtain a gymnasium suit, provide yourself with
heavy soled rubber shoes and report on main floor, Field House promptly
at

Time o'clock Day Date

If you have been placed in Class C or D you must register for Course Number
..... Bring this card with you to the Director of Service Program for Men
when you register for the Semester.
Class C or D men will be recalled later for another and more thorough examina-
tion. Report any change of address immediately to the Department of Service
Program Office.

HEALTH EXAMINATION RATING CARD.

Note that students classed as A or B may take the Physical Achievement Test.
See the various types of requirements Chapter VI.

Teacher Load.—The maximum teaching load of instructors in
physical education should probably range from 30 to 36 hours per
week. Figured on a basis of two physical education hours for one
lecture hour in other subjects, a physical education load for actual
teaching would be twenty-four hours. In determining the teaching
load, all duties for which staff members are responsible, such as teach-
ing required classes, coaching, directing intramural athletics, teaching
hygiene, examining students, advising students, office routine, and all
other duties should be included. Five hours appears to be the desirable

maximum teaching load in any one day,² and the standard of one or more instructors or assistants for every 250 students enrolled in the service program has also been proposed.³

Election of Activities.—The policy in some institutions permits election of activities by all students who pass the health examination. Another plan* and one that is increasing in popularity permits election of activities by those students who pass the health examination and a motor ability test and in some instances habit, attitude, and knowledge tests. Regardless of the details of the plan it is important that these students be grouped as accurately as possible according to interest and ability. Moreover, they should be given instruction, and tests should be used to determine progress. If they have passed all the minimum achievement standards laid down by the department they should probably be excused from all requirement, or be permitted to elect. Choice-of-sport forms which are used in two institutions are shown on page 159.

Fees.—Fees, charges, deposits, and refunds are described in detail in the chapter on equipment.

Roll Taking.—Various devices and procedures have been used for recording attendance. Common among these methods are calling names, reporting by number, standing on numbers painted at regular intervals along the floor, reporting by squads, recording attendance by signature, and the checking of attendance by the instructor or an assistant as the members of the class report on the floor or field. The calling of names unquestionably is the most desirable method in small classes or for the first few meetings of a larger group. It helps the instructor to become acquainted with the students. On the other hand, it is likely to be an unnecessary waste of time. Attendance should be recorded by the instructor or an assistant by some rapid method which does not require more than one or two minutes of time which otherwise might be used for instruction and activity.

One plan provides a number for every member of the class. An attendant stands at the main door of the locker room, through which all students must pass, and checks those individuals present as they pass through. By the time all members of the class reach the field or floor the roll is completed and no time is taken from the regular class period.

Attendance records should be transferred from a daily or weekly record card to a permanent record card. In institutions where at-

²Standards on Teaching Loads. North Central Association of Colleges and Secondary Schools.

³Sixth Yearbook, Department of Superintendence of the National Education Association.

* Discussed in Chapter VI.

tendance at classes is not compulsory, as for example the plan inaugurated at the University of Illinois, roll taking is unnecessary. This policy permits the student to attend classes regularly, infrequently, or not at all but he must be able to pass the final examination and minimum achievement standards required by the department.

PRINT name in full.....
 (Last name) (First name) (Middle name)

Address

Prescribed Physical Training for Fall Season.

Each Freshman must elect an activity from one of the following groups of sports:

I. INTERCOLLEGIATE SPORTS:

Crew, cross-country, football, lacrosse, soccer, track.

Sport elected

II. INTRACOLLEGIATE SPORTS:

Fencing—Mon., Wed., Fri., 2, 2.30, 3.

Handball—Mon., Wed., Fri., 2, 3, 4.

Singles—Mon., Wed., Fri., 2, 2.45, 3.30, 4.15.

Swimming (for beginners only)—Mon., Wed., Fri., 2, 3, 4, 5.

Tennis—Mon., Wed., Fri., 2, 3, 4.

Hiking. (Inquire at 6 Wadsworth House.)

A. Sport elected

B. Section elected

WELLESLEY COLLEGE

Choice of Sports			Fall of				
Full Name				Class			
Last name	First name	Middle name					
<i>Physician's Recommendation:</i>			<i>Any sport</i>		<i>No sport</i>		
<i>Restricted:</i>			<i>Medium</i>		<i>Light</i>		
<i>Remarks:</i>							
<i>Posture Grade</i>			<i>Weight</i>		<i>Height</i>		
<i>Student's Choice:</i>							
<i>Fall:</i>			<i>Skill:</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Novice</i>
<i>Spring:</i>			<i>Skill:</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Novice</i>

Form 55

After dressing take this card to room 3.

CHOICE OF SPORT CARDS (above) HARVARD UNIVERSITY, (below) WELLESLEY COLLEGE.

Individual Permanent Records.—An individual permanent record form for every student taking physical education is highly desirable. The comprehensive and useful permanent record form⁴ shown on page 160 includes data of the health examination; attendance record for freshmen and sophomore years; grade in the various activities; record of uniform; towel, locker, and basket number; padlock combination; articles lost; charges; refunds; age; height; weight; and

⁴ Designed by H. A. Scott and adapted by DePauw University and others.

name. This permanent record is kept in a special binder for the four years the student is in college. When the student graduates or withdraws from the institution the record is removed and filed permanently. The Rice Institute permanent record card (page 162) is especially designed to record the professional major courses taken and completed, in addition to the other information secured. Other types of forms (pages 164, 165) are used for permanent records.

DEPAUW UNIVERSITY—PHYSICAL EDUCATION DIVISION

[illegible]

AGREEMENT In accepting articles of equipment from DePauw University, I hereby agree to become financially responsible for them according to the price list posted on the bulletin board, and to abide by all rules and regulations concerning the use of equipment.

Home Address	Sign			
Basket Number	{ Combination R Combination R Combination R }	L	R	L
Lock Number		L	R	L
		L	R	L
REMARKS				

DATE OF ENTRANCE	NAME
------------------	------	-----	-----

INDIVIDUAL PERMANENT RECORD FORM (Front). DESIGNED BY H. A. SCOTT AND ADAPTED
BY DEPAUW UNIVERSITY.

Absences and Excuses.—The policy regarding absences in physical education should be the same as that in other departments of the institution. In other words, the policy of the institution toward absences should apply to physical education just as it does to history or science. If attendance at classes is not required as long as students pass their examinations the same should apply in physical education, although minimum achievement standards must be provided.

Opposing views exist regarding excused absences. One holds that a statement from the department of health education, or the dean should excuse the student for absence from class. Another contends

that excused absences in excess of three, or whatever number is the rule of the institution, should be made up before the end of the term or semester. Tardiness in excess of a certain number would be classed as an unexcused absence unless accompanied by a written excuse from proper authorities and absences in excess of one-fourth or one-third of the semester's work would automatically result in "failure." Some individuals are opposed to "make-ups" of absences. The group

NAME

DATE OF ENTRANCE

HEALTH EXAMINATION RECORD

Age	Height	Weight	Waist
Operations		Heart	
Old Injuries		Lungs	
Posture		Abdomen	
Skin		Genitalia	
Vision		Feet	
Hearing			
Nose and Throat			

The person whose name appears above is physically able to participate in the regular program of physical education. He is not physically fit to participate in competitive athletics.

Classification Signed, M. D.

ACTIVITIES GRADE	
Speedball	
Tennis	
Swimming	
Handball	
Bowling	
Volleyball	
Boxing	
Tumbling	
Soft Ball	
Golf	
Basketball	

PERMANENT CLASS RECORD

SEASONS		ATTENDANCE RECORD FRESHMAN YEAR									SEASON	GRADE
DATE		1	2	3	4	5	6	7	8	9	GRADE	
Fall Outdoor	19											
First Indoor	19											
Second Indoor	19											
Spring Outdoor	19											

REMARKS

SEASONS		ATTENDANCE RECORD SOPHOMORE YEAR									SEASON	GRADE
DATE		1	2	3	4	5	6	7	8	9	GRADE	
Fall Outdoor	19											
First Indoor	19											
Second Indoor	19											
Spring Outdoor	19											

REMARKS

INDIVIDUAL PERMANENT RECORD FORM (Reverse). DESIGNED BY H. A. SCOTT AND ADAPTED BY DEPAUW UNIVERSITY.

favoring this view argues that "make-ups" are founded on the idea that physical education is primarily exercise, and, therefore, are as wrong in principle as would be the practice of permitting a person to "make-up" all meals missed during a severe illness. This group would set up standards and grade students upon their approximation of the standards without regard for attendance at classes.

Unquestionably, the latter practice is the one to be desired. The fact that it requires various types of achievement tests should stimulate members of the profession in the development of the necessary standards.

Obviously, students should not be excused, permanently or tem-

porarily, from physical education except upon the advice of the director of health education. As stated elsewhere, it seems clear that stu-

THE RICE INSTITUTE
DEPARTMENT OF PHYSICAL EDUCATION
PHYSICAL EDUCATION MAJOR RECORD
ACADEMIC RECORD

SCHOOL YEAR 19____19____				SCHOOL YEAR 19____19____				SCHOOL YEAR 19____19____				SCHOOL YEAR 19____19____			
SUBJECT	GRADE			SUBJECT	GRADE			SUBJECT	GRADE			SUBJECT	GRADE		
	1	2	Y		1	2	Y		1	2	Y		1	2	Y
PHY Ed 100				PHY Ed 200				PHY Ed 300				PHY Ed 400			
CHEM 110				BIOL 100				BIOL 200				BIOL 300			
ECON 100				B A 210				EDUC				HIST 310			
ENG 100				ENG 210								EDUC			
FOR LANG				FOR LANG											

PRACTICE TEACHING COMPLETED AT _____ SCHOOL TOTAL HOURS _____

NATURE OF PROGRAM _____ SUPERVISOR _____

OTHER TEACHING EXPERIENCE _____

EQUIPMENT RECORD

	OUT	IN	OUT	IN	OUT	IN	OUT	IN	ARTICLE LOST	DATE	BILL NO	AMT	REMARKS
WARM-UP SHIRT												\$	
SLEEVELESS SHIRT												\$	
GYMNASIUM PANTS												\$	
PAIR SOCKS												\$	
SUPPORTER												\$	
TOWEL												\$	
PADLOCK												\$	
BASKET												\$	
												\$	
												\$	

AGREEMENT:

In accepting articles of equipment from The Rice Institute, I hereby agree to become financially responsible for them according to the price list posted on the bulletin board, and to abide by all rules and regulations concerning the use of equipment.

SIGNATURE _____

BASKET NUMBER _____ DRYING LOCKER NUMBER _____ LOCK NUMBER 1 _____ 2 _____

GRADUATED FROM _____ HIGH SCHOOL DATES ATTENDED: 19____ TO 19____

OTHER SCHOOLS ATTENDED _____ DATES 19____ TO 19____

PERMANENT HOME ADDRESS _____ SCHOOL ADDRESS _____

DATE OF ENTRANCE _____ 19____ FR SO JR SR. NAME _____

PERMANENT RECORD CARD (Front).

dents should not be excused from physical education for any reason. Any student who is well enough to enter a college or university should be well enough to enter a course to study his or her individual

health needs and to learn some activity which would always be of use. Such a course might be a restricted, corrective, or rest course.

NAME _____

ACTIVITY RECORD

		FOOTBALL	BASKETBALL	TRACK AND CROSS COUNTRY	BASEBALL	SWIMMING AND LIFE SAVING	HAND BALL AND VOLLEY BALL	SOCCER AND SPEED BALL	TUNNELING AND STUNTS	APPARATUS AND CALISTHENICS	ELECTIVES			
DATE, GRADE AND CREDIT EARNED IN LABORATORY PERIODS	1													
	2													
	3													
	4													
	5													
	6													
CREDITS REQUIRED		8	0	8	4	2	2	2	2	2	2	2	2	2
CREDITS EARNED														

RED CROSS LIFE SAVER DATE PASSED _____ 19____ EXAMINER DATE PASSED _____ 19____

RECORD OF AWARDS

ACTIVITY	EVENT OR POSITION	RICE AWARDS				PREP SCHOOL AWARDS
		Fr	So	Jr	Sr	RECORD NUMBER
FOOTBALL						
BASKETBALL						
TRACK						
BASEBALL						
CROSS-COUNTRY						
NON-ATHLETIC						
HONORARY AWARDS:						

REMARKS:

PERMANENT RECORD CARD (Reverse).

The question is frequently raised: "Should students who compete regularly in the intramural program be excused permanently from the required physical education?" As organized in most institutions intramural athletics are not a substitute for the required program. The intramural program is voluntary and competitive. No instruction is attempted except in a very few departments. Conceivably,

an intramural participant who is excused from a required program might go through college without any instruction regarding skills, play attitudes, and health habits. If instruction were given in intra-

NAME _____

COURSE **A2**

DATE **SPRING 1932**

SWIMMING

GROUP "A" TEST

POINTS _____

ACTIVITY	T1	T2	R	AV	ACTIVITY	T1	T2	R	AV	ACTIVITY	T1	T2	R	AV	FINAL GRADE
SOCCER					SWIMMING					BASEBALL					A1
SPEEDBALL					HANDBALL					TENNIS					A2
TOUCH FOOTBALL					BASKETBALL					VOLLEYBALL					
TRACK					TUMBLING					TRACK					

REPORT FROM MEDICAL OFFICE _____

Form ATTA3

RECORD CARD, COLUMBIA COLLEGE.

NAME _____

COURSE **B2**

DATE **SPRING 1932**

SWIMMING

GROUP "A" TEST

POINTS _____

BASKETBALL		HANDBALL		WRESTLING		BOXING		TRACK		SWIMMING		TOTAL
TESTS	CLASS	TESTS	CLASS	TESTS	CLASS	TESTS	CLASS	TESTS	CLASS	TESTS	CLASS	
1	2	1	2	1	2	1	2	1	2	1	2	

REPORT FROM MEDICAL OFFICE _____

Form ATTE2

RECORD CARD, COLUMBIA COLLEGE.

mural athletics, and if the intramural program reached all students not in varsity athletics, there no longer would exist a reason for the present required program. The two phases of physical education, required

and intramural, would merge into one. Since this condition exists in few, if any, institutions it is highly important that the required program be provided for the unskilled students who are denied the opportunity to participate on intramural and varsity teams.

BARNARD COLLEGE										ENTERED		CLASS OF	
NAME													
YEAR	SEM	HEALTH	POSTURE	M A	SCHOLARSHIP	A A OFFICES	TEAM	MEET	TOURNAMENT	AWARD	TERM	GRADE	
FRESHMAN	1												
	2												
SOPHOMORE	1												
	2												
JUNIOR	1												
	2												
SENIOR	1												
	2												

RECORD CARD, BARNARD COLLEGE (Front).

GENERAL REMARKS

YEAR	SEM	TEAM GAMES	INDIVIDUAL GAMES	SWIMMING CLASSIFICATION	DANCING	ATTITUDE	REMARKS
FRESHMAN	1						
	2						
SOPHOMORE	1						
	2						
JUNIOR	1						
	2						
SENIOR	1						
	2						

RECORD CARD, BARNARD COLLEGE.

The same argument applies to members of the squad of inter-collegiate teams. They should be excused, however, during the season of the sport in which they are competing but intramural participants and varsity athletes should be required to pass the department's mini-

imum achievement tests. Members of the squad of intercollegiate teams should report back to the required classes after the intercollegiate season ends if all standards have not been met. Intramural participants should not be excused except under the conditions mentioned above.

Oberlin College has the following rule regarding absences: ⁵

"Absences from classes in physical education are treated the same as absences from other classes. The instructors in physical education do not have authority to excuse any one from class. All absences must be reported to the Office of the Dean of Men. Students are not permitted to make up work by attending other classes. Classes begin promptly at three minutes past the hour and are dismissed seventeen minutes before the next hour. Students are required to report promptly in uniform and to attend regularly."

Barnard College has adopted the following policy regarding absences: ⁶

"1. Cuts:

"Beginning this year (1931) no definite number of cuts will be allowed. Absences may affect directly the final grade in each course. When a student is physically unable to report to her regular class she has the privilege of substituting remedial at that hour (Exercise Room 'B' in the basement. Report to this in regular work costume); or games on the roof in the fall and spring; or she may take a cut.

"2. Excuses:

"In cases of personal illness necessitating absence from college, the student should report to the college physician immediately upon return to college. A temporary adjustment of the student's program may be made when desirable. Excuses for one day's absence will NOT be issued by the Medical Office and will NOT be accepted by the Department of Physical Education. Students are urged to file cut slips in the box outside of Office 209 explaining such absences. No student can voluntarily alter her program. Such alteration must be recommended by the college physician and reported to the Department of Physical Education or made directly by the Head of the Department of Physical Education. In case of physical disability a student may substitute remedial class *temporarily* for her regular activity. If it is necessary to prolong this (as in case of a cold preventing swimming) report to the Head of the Department and register for another activity. A student wishing to make *one-day* substitution because of illness, who does not feel well enough to take remedial on the day she wishes to make the substitution, may take remedial on Friday, provided she is not taking any other activity on that day."

⁵ "Physical Education for Men." Bulletin No. 280. Oberlin College, Oberlin, Ohio, September, 1931, p. 13.

⁶ Wayman, Agnes R. and Others. A Syllabus for Physical Education. Edwards Brothers, Inc., Ann Arbor, Michigan, 1931, pp. 28-29.

At Ohio State University ⁷ "any student who is consistently absent from or drops Physical Education for any reason whatsoever, without having permission from the department office, will be suspended from the University. Two absences are permitted each quarter to cover sickness or injury. No excuse is needed or accepted. Do not come to the office to have the first two absences excused so you can take two cuts later. No cuts are allowed in Physical Education. After a student has incurred two absences due to sickness or injury he must report to the department office at the time of his Physical Education class, if he is attending other classes, even though his condition in such that he is not able to take Physical Education work."

Columbia College,⁸ in accordance with a ruling of the Committee on Instruction, permits students to be absent five times without penalty. One half an absence is recorded for each lateness. Excuses for illness are recognized only when they come from the University Physician. No credit is awarded students having a total of more than twelve absences.

Schedules.—Where a large number of students are using limited facilities, as is the rule rather than the exception, schedule making is a most difficult problem. Where men and women use the same gymnasium their indoor classes should be scheduled on alternate days or half days. Common use of outdoor facilities should be avoided if at all possible. (See pages 168-172).

Marks.—Bovard and Cozens⁹ show clearly the shortcomings of the present tendency of marking in physical education. An inventory of the common practices of many instructors in physical education * reveals the fact that a very large percentage are still basing their grades on several of the following: attendance, effort, interest, improvement, attitude toward the activity, conduct in class, and achievement in physical skills or in game activities. Because of these widely differing bases as determining factors in physical education grades a great deal of inaccuracy and inconsistency still exists in our marking system. If the objectives of physical education are development of the organic system, skills, play attitudes, and standards of conduct then, so far as possible, tests should be devised and used to determine the amount of development in each of the four categories.

⁷ Manual of Physical Education for Men, Ohio State University, September, 1932, pp. 13-14.

⁸ Davis, P. L. "Physical Education in Columbia College." Columbia College Press, Columbia University, p. 15.

⁹ Bovard, J. F. and Cozens, F. W. Tests and Measurements in Physical Education, W. B. Saunders Company, 1930, p. 18.

* Wagner, J. L. Unpublished preliminary study, Teachers College, Columbia University, 1934.

**SCHEDULE OF CLASSES AND PLUNGE HOURS FOR FALL QUARTER
1931**

Varsity Pool		Intermediate Pool	Beginners' Pool
9	Closed	Plunge Daily	Closed
10	Class: Tu. Th. Plunge: M. W. F.	Class: M. T. W. T. Plunge: F.	Class: M. T. W. Th.
11	Varsity & Frosh Daily	Class: M. T. W. T. Plunge: F.	Class: M. T. W. Th.
12	Closed	Reserved for Faculty Daily	Closed
1	Closed	Closed	Closed
2	Class: M. W. Plunge: T. Th. F.	Class: M. T. W. T. Plunge: F.	Class: M. T. W. Th.
3	Plunge Daily	Class: M. W. T. Th.	Class: T.-Th.
4	Varsity	Class: M.-W., T.-Th. Plunge: F.	Class: M. T. W. Th.
5	Varsity	Plunge Daily	Closed
6	Varsity	Plunge Daily	Closed
7	Closed	Plunge Daily	Closed
8	Closed	Faculty Instruction, Wed. Plunge: M. T. Th. F.	Faculty Instruction, Wed.
9	Closed	Plunge Daily	Closed

Intermediate pool open Saturday—10 A.M. to 5 P.M.

Classes are held from ten minutes past the hour until twenty minutes of the next hour. The pool is open for plunge between classes.

SCHEDULE OF CLASSES AND PLUNGE HOURS FOR A UNIVERSITY WITH THREE POOLS.

Johnson¹⁰ suggests occasional short written tests on rules, occasional tests of isolated game skills, National Amateur Athletic Federation or Wayman Efficiency Tests twice yearly, Bancroft's Posture or Silhouettegraph examination twice yearly, and a physical and medical examination twice yearly, all as factors in marking or grading the student.

The whole testing and grading system is discussed in detail in a subsequent chapter.

Credit.—The problem of credit in physical education has long been the concern of members of the profession. In the secondary schools the problem originally centered around promotion from grade to grade. More recently there has been a definite attempt to establish some basis for awarding credit for graduation from secondary schools, and entrance to and graduation from colleges and universities.

In 1930, for the first time, the Society of Directors of Physical Education in Colleges and the Society of State Directors of Physical and Health Education met together to discuss credit in physical

¹⁰ Johnson, Georgia B. *Organization of the Required Physical Education for Women in State Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1927.

THE RICE INSTITUTE HANDBALL COURT RESERVATIONS

hour	COURT 1	COURT 2	COURT 3	COURT 4
8				
9				
10				
11				
12				
1				
2				
3				
4				
5				
6				
7				

education. That same year committees were appointed to formulate minimum and recommended standards for college entrance. Brownell¹¹ suggests bases for awarding credit for high school graduation and college entrance. Nichols¹² classifies into five main groups the opinions of State and College Directors of physical education regarding credit.

One group is represented by those who believe that physical education is primarily an educational procedure which should be graded and progressive in character, adapted as far as possible to the physical needs and abilities of the individual and required of all students, under trained leadership. In such a scheme they believe that the same credit and penalties should be applied to success or failure in this field as in any other phases of education.

A second group consider health education primarily if not entirely a health measure and as such it should be required without regard for credit.

A third group suggests comprehensive exemption tests and feels that credit is of no great concern. These individuals would stress positive achievement of results rather than the securing of abstract credits by regular attendance at classes.

A fourth group favors a combination of the acceptance of entrance credit and the setting up of certain minimum achievement standards.

The fifth group takes the position that the problem is too complicated for any worth-while solution until more of the facts are known.

Meredith¹³ has recently completed a study of the whole problem of credit in physical education. Of 82 institutions including the state universities, land grant colleges, and certain other state institutions, 50 institutions or approximately 60 per cent accept for entrance credit in either physical education or health education, or both.

Nichols¹⁴ also lists some of the values, to physical education in general and to colleges and universities in particular, to be derived from the acceptance of entrance credit and the granting of credit for graduation.

1. It should result in an increased recognition on the part of colleges and universities of the educational value of health and physical

¹¹ Brownell, C. L. "Upon What Basis Should Colleges Be Asked to Give Entrance Credit for Secondary School Programs of Physical Education?" *Proceedings, Society of Directors of Physical Education in Colleges*, 1930, p. 13.

¹² Nichols, J. H. "The Granting of College Entrance Credit in Physical Education." *Proceedings, Society of Directors of Physical Education in Colleges*, 1930, p. 26.

¹³ Meredith, W. F. *Regulations Concerning the Acceptance of Health and Physical Education for College Entrance Credit*. The Law Abstract Company, Norwalk, Ohio, 1933.

¹⁴ Nichols, J. H. *Op. cit.*

SCHEDULE FOR FALL QUARTER 1931

Hour	Enrollment	Sport	Days	Instructor	Place	Bad Weather
9:00	45	Speedball	MW	H-J	Fields	Gym 100 A & E
	35	Boxing	TT	A	Mezz 30	
	40	Volleyball	MF	B	Courts	
	40	Volleyball	TT	C	Courts	
	20	Handball	WF	D	HB Courts 014-018	
	20	Handball	TT	B	" " "	
10:00	40	Boxing	MF	A	Mezz 30	Ground 02-03
	20	Handball	TT	E	HB Courts 014-018	
	40	Tennis	TT	F	T. Courts	
	40	Volleyball	WF	G	Courts	
	35	Basketball	MW	H	Gym 100 B-C-D	
	35	Basketball (Select)	TT	H	" "	
	45	Speedball	MW	Fields	Gym 100 A & E
	45	Speedball	TT	J	"	
	25	Swimming (Beginners)	MW	.....	Mezz 55
	25	Swimming (Beginners)	TT	.....	"
	35	Swimming (Advanced)	MW	B	Mezz 57	
	35	Swimming (Exper.)	TT	B	Mezz 56	
		Track	MF	K-L	Stadium	
		Track	TT	K-L	Stadium	
	40	Wrestling	WF	D	Mezz 15	
	30	Dancing	TT	G	Mezz 30	
11:00	20	Archery	MF	E	Stadium	Ground 02-03
	40	Tennis	TT	F	Courts	
	40	Boxing	TT	D	Mezz 30	
	40	Wrestling	TT	A	Mezz 15	
	35	Basketball (Advanced)	MW	H	Gym 100 B-C-D	Ground 02-03
	35	Basketball	TT	M	Gym 100 B-C-D	
	40	Volleyball	MF	.....	Courts
	45	Speedball	WF	.....	Fields
	45	Speedball	TT	H	Fields	Gym E, Wed. BCD, Fri. Gym A & E
	25	Gymnastics	MF	G	Gym 100-A	
	25	Swimming (Beginners)	MW	F	Mezz 55	
	35	Swimming (Exper.)	MW	B	Mezz 56	
	25	Swimming (Beginners)	TT	.....	Mezz 55
	35	Swimming (Exper.)	TT	B	Mezz 56	
	20	Handball	WF	.....	HB Courts 014-018
	20	"	TT	E	" " "	
		Track	MF	K	Stadium	
		Track	TT	K	"	
1:00	40	Tennis	MW	Courts	Gym 100 B-C-D
	40	Tennis	TT	.....	"
	20	Archery	TT	E	Stadium	Ground 02-03
	40	Volleyball	MW	.....	Courts
	40	"	TT	.....	"

SCHEDULE FOR FALL QUARTER (*continued*)

Hour	Enrollment	Sport	Days	Instructor	Place	Bad Weather
2:00	40	Boxing.....	TT	A	Mezz 30	
	40	Tennis.....	WF	.....	Courts	Gym 100 A & E
		".....	TT	F	"	"
	45	Speedball.....	MW	D	Fields	Gym 100 B-C-D
	45	".....	TT	.....	"	"
	20	Handball.....	WF	.....	HB Courts 014-018	
	40	Volleyball.....	MF	.....	Courts	Ground 02-03
	40	".....	TT	.....	"	"
	25	Dancing.....	TT	H	Mezz 30	
	25	Swimming (Beginners)	MW	M	Mezz 55	
	25	Swimming (Beginners)	TT	.....	Mezz 55	
	35	Swimming (Advanced)	MW	K	Mezz 57	
	35	Swimming (Exper.)...	TT	B	Mezz 56	
3:00	40	Boxing.....	MF	D	Mezz 30	
	40	Volleyball.....	WF	F	Courts	Ground 02-03
	40	".....	TT	D	"	"
	35	Basketball.....	MW	C-J	Gym 100 B-C-D	
	35	Basketball.....	TT	C-J	"	
	45	Speedball.....	WF	L	Fields	Gym 100 A & E
	45	".....	TT	A	"	"
		Track.....	TT	K	Stadium	
	20	Handball.....	MF	E	HB Courts 014-018	
	40	Wrestling.....	MW	A	Mezz 15	
	40	Soccer.....	TT	L	Stadium	
	25	Swimming (Beginners)	MW	K	Mezz 55	
	25	Swimming.....	TT	.....	Mezz 55	
	35	Swimming (Exper.)...	TT	B	Mezz 56	
4:00	40	Boxing.....	MW	A	Mezz 30	
	40	".....	TT	A	Mezz 30	
	30	Fencing.....	MF	N	Stadium	
	30	Fencing.....	TT	N	Stadium	
	25	Gymnastics.....	TT	G	Gym 100-A	
	35	Basketball.....	WF	C	Gym 100 B-C-D	
	40	Soccer.....	MF	G-L	Fields	
	40	Soccer.....	TT	L	Fields	
		Swimming.....	MWTT (I.P.E.)	E	Mezz 55	
	35	Swimming (Advanced)	MW	B	Mezz 56	
	35	Swimming (Beginners)	TT	J	Mezz 56	
		Swimming.....	TTF	B	Mezz 57	
					(Frosh & Varsity)	
	40	Wrestling.....	WF	D	Mezz 15	
	40	Wrestling.....	TT	D	Mezz 15	
	50	Track.....	MF	K-L	Stadium	
	50	Track.....	TT	K-L	Stadium	
		Cross Country.....	MF	F	Stadium	
		Cross Country.....	TT	F	Stadium	
	45	Speedball.....	MW	J	Fields	Gym 100 A & E
	25	Archery.....	TT	.....	Stadium	
	45	Speedball.....	TT	J	Stadium	Gym 100 B-C-D

education and it will be a very effective means of placing physical education on a plane equal to that of other so-called academic subjects.

2. It will be a tremendous stimulus to schools in improving the standards of their programs.

3. It will necessitate the setting up of objectives and standards in the college program to determine what college students should be taught.

4. It would make possible the setting up of college physical education curricula that recognize differences in preparation and ability.

5. It might well lead to the organization of sub-freshmen courses in physical education similar to the sub-freshmen courses in mathematics and English now being given at many institutions.

6. It would result in some real research on standards in health and physical education on the college level.

7. It would be of assistance to departments offering majors in physical education.

8. Finally, it would mean that a much larger percentage of entering freshmen have received some instruction in health and physical education.

Surely all agree that colleges and universities should have definite standards for their work in physical education. As long as the credit system is accepted as desirable in other subjects it should be granted in physical education. It should be positive credit, granted on the basis of laboratory credit in the sciences,¹⁵ and based on comprehensive tests. Students who exhibit evidence of physical fitness; correction of remediable defects; minimum achievement in certain fundamental skills, team games and individual sports; desirable health and play habits and attitudes, and adequate knowledge might well be granted positive credit toward graduation. The development of desirable comprehensive tests is a difficult undertaking but it can and is being done.

Instruction vs. Participation Periods.—In asking for credit for physical education it is assumed that the physical education classes are used primarily as *instructional* periods. The college program, if it is to be complete, should consist of instruction, participation, and relaxation. Rest and relaxation should be provided for those who need it in the restricted and corrective program. Participation and competition should be offered in intramural athletics. Instruction should be the emphasis in the required classes. It is here that opportunity is provided to teach and improve the motor skills of all students. It is recognized that some individuals are endowed

¹⁵ "Report of Committee on the Ten Cardinal Points in the Platform of Health and Physical Education." J. F. Williams, Chairman. *Journal of Health and Physical Education*, September, 1931.

with more native ability than others, but all can improve to some extent. Skills learned in required classes should be put into practice in intramural competition and in recreational games.

It is discouraging to note the apparent lack of appreciation by many college directors, coaches, and teachers of the purpose and importance of the instructional periods in physical education. Lack of professional interest is indicated in many ways.

1. By failure to appear in costume suitable for teaching.
2. By failure to prepare any lesson or teaching material.
3. By standing around on the floor or field as a spectator or policeman.
4. By acting merely as "whistle blower" in officiating games.
5. By assigning the class to a student assistant and failure to appear altogether.

The Lesson Plan.—Teachers in elementary and secondary schools have found the use of daily written lesson plans helpful. Similar plans should not be too much to expect of the physical education instructor in college. Coaches, who must be excellent teachers to retain their positions, have a very definite lesson plan in mind, or on paper, for every practice session. The coach has precise objectives which he hopes to accomplish, he has carefully planned the time schedule and the assignment of duties for each player, and he tests progress by frequent scrimmages. The same standard of excellence in teaching should be expected of all members of the staff, whether the activity is intercollegiate football or a required physical education class in speedball or tumbling. Valuable assistance can be given the instructors if the department has a course of study or program of activities.

The pressing need for curriculum construction in college physical education is discussed in detail elsewhere (Chapter IX). It will suffice here to state that few college directors of physical education or athletics have considered required physical education for the mass of students of sufficient importance to set up a course of study, including objectives, content or activities, teaching methods and procedures, and tests which show what objectives have been attained. Too many have been satisfied to use a majority of the staff for coaching purposes, while one or two instructors with student assistants do what little teaching is done in regular physical education classes.

A lesson plan or daily teaching program should include:

1. Teacher objectives; i.e., skill in basket throwing, etc.
2. Student objectives; i.e., fun, skill, win, etc.
3. Explanation of the nature and purpose of the game.

4. Playing the game.
5. Discussion of the game as played.
6. Practice of single fundamental skills.
7. Practice of various skills in combination.
8. Playing the game.
9. Discussion, etc.

Supplementary Devices in Teaching Physical Education.—It is not intended to suggest that all the time of every physical education period should be devoted to the teaching of skills. Some *competition* is desirable and the time given to it will depend largely upon the number of hours per week of required physical education. If only two hours per week are provided the period should be primarily instructional. On the other hand, if five hours per week are provided one or two periods might well consist of competition. In any event, as the ability of the students improves the amount of time devoted to competition becomes increasingly greater while that given over to instruction decreases correspondingly.

Point systems, notebooks, examinations, reports, and discussions have all been used with varying success as supplementary devices in teaching required classes.

Teaching Methods.—The fact that a college instructor knows his subject is no guarantee that he knows how to teach it. This is as true in athletics and physical education as it is in the academic field. Knowledge of football or swimming does not necessarily indicate teaching or coaching ability. The truth of this statement is recognized when it is realized that nearly all states require professional as well as academic training of all public school teachers.

No college instructor or coach is so proficient that he should not attempt to master the principles underlying good teaching, and make every effort to improve his methods. Certain facts, principles, and procedures should be considered in the conduct of any physical education activity. In addition to the ability to understand and get along with young people the instructor or coach should have certain anatomical, physiological, psychological, and sociological principles in mind. A few of these principles are suggested below.

Anatomical:

1. *Balance.*—The equilibrium of the body depends not only on muscular coordination, but it involves the semicircular canals of the inner ear, the eyes, the ligaments around joints, and other factors.
2. *Opposition.*—The principle of opposition¹⁶ of parts in bodily

¹⁶ Williams, J. F. *Principles of Physical Education*, W. B. Saunders Company, Philadelphia, 1927, p. 322.

movement should be applied in all teaching. In walking, running, climbing, throwing, etc., the opposition is between arms and legs on opposite sides of the body.

3. *Form*.—The technique or form, which will bring the most effective results with the least expenditure of energy, is the one that should be taught in all motor activities.
4. *Center of gravity*.—The center of gravity of the female is lower than that of the male, while the muscles of the male, particularly those of the shoulder girdle, are stronger than the muscles of the female. Hanging exercises, therefore, are not as desirable for women as for men.
5. *Pelvis*.—The pelvis of the female is broader and shorter than that of the male, and the femur of the female joins the hip bone more obliquely than does that of the male. This explains the greater speed of the male.
6. *Foot*.—The foot is so constructed that the weight should be carried on the outside rather than the inside. The straight-foot position, then, is indicated in standing, walking, running, charging in the football line, and in other motor activities.

Physiological:

1. There is no evidence to justify the use of "breathing exercises."¹⁷
2. Students should not be permitted to engage in *vigorous* activities (intramural track meets, for example) without a preliminary period of training.
3. Skilled students can play longer with safety and pleasure than can the unskilled.

Psychological:¹⁸

1. Individuals *respond* to situations. To change the response or behavior, merely change the situation.
2. *Interest* in the activity must be present if the individual is to learn most effectively.
3. *Exercise, or repetition* of an act is essential for efficient learning. Skills unused grow rusty.
4. The *effect* of the response must be satisfying if it is to be repeated and annoying if it is to be avoided.
5. Many *trials* or responses may be necessary before the one is hit upon which brings release.
6. Learning is *specific*. We learn just what we practice. If we

¹⁷ Williams, J. F. Op. cit., pp. 113-121.

¹⁸ Adapted from Watson, G. B. and Spense, R. B. *The A. B. C. of Educational Psychology*. Educational Problems For Psychological Study. The Macmillan Company, New York, 1930, p. 325.

would learn to tackle we must tackle. If we would learn to throw a forward pass we must forward pass, rather than practice some formal calisthenic arm drill.

7. *Individual differences* occur in interests, abilities, etc.
8. There is a *normal distribution* of individual traits and abilities.
9. *Associate and concomitant learnings*¹⁹ are involved in all teaching situations, and they may be more important than the primary learnings.
10. *The learning curve*, or the amount, rate, and limit of learning varies with the learner, the thing being learned, and the conditions under which the learning takes place.
11. Avoid *errors* in learning and correct the ones that have been made.
12. *The whole vs. the part method* should be considered in all teaching. The whole method is superior to the part method in learning to memorize certain materials. Whether the whole, or part, or a combination method is superior in physical education needs experimentation and study.
13. *Length and frequency of the learning period* are important factors in efficient learning. Practice periods should be short and spaced over a long period of time.²⁰
14. Students should have *knowledge of the outcomes* expected from participation in physical education activities.
15. Self criticism by the students should be encouraged.

Sociological:

1. All students, who are physically able, should be required to participate in organized team games.
2. Opportunity for leadership should be provided.
3. Self-discipline, self-control, self-direction, initiative, responsibility, etc, should be sought.
4. All students should be required to participate in individual sports which are suited to their needs, and which will function in their lives after graduation from college.

Administrative Policies and Standards.—Some of the standards and policies in the organization of the required physical education classes may be summarized as follows:

The health examination should precede the registration for physical education.

¹⁹ Kilpatrick, W. H. *Foundations of Method*. The Macmillan Company, New York, 1925, pp. 102-103.

²⁰ Griffith, C. R. *The Psychology of Coaching*. Chas. Scribner's Sons. New York, 1926, pp. 88-89.

Students should be classified into at least two groups: those who are without significant handicaps, and those whose physical activity should be restricted because of limitations revealed by the health examination.

Physical capacity or motor ability tests for purposes of classification are recommended.

The optimum size for a class is approximately 25 or 30 students per instructor.

Classes should be held at least three times weekly.

In a one-hour period 30 or 35 minutes should be provided for activity, 15 to 20 minutes for dressing and shower, and 10 minutes for changing classes.

The maximum teaching load including teaching, coaching, directing, advising, etc., should range from 30 to 36 hours per week.

Five hours should be the maximum class teaching load in any one day.

At least one instructor or assistant for every 250 students enrolled in the service program has been proposed.

There should be some opportunity for students to elect activities of their choice.

Attendance should be recorded by some rapid method which does not take more than one or two minutes of class time.

Individual permanent record cards are recommended.

Absences in physical education should be treated according to the university policy in other departments.

Common use of outdoor facilities by men and women should be avoided, if possible.

Insofar as possible, marks in physical education should be based on tests of progress in health status, skills, play habits and attitudes, etc.

The institution should grant positive credit for physical education on the basis of laboratory credit in the sciences.

Required physical education classes should be used as *instructional* periods.

The use of some type of lesson plan as a part of a course of study is recommended for instructors in college physical education.

Instructors and coaches should be alert for teaching devices to assist in making the instructional period more interesting and valuable.

Instructors and coaches should acquire an understanding of certain anatomical, physiological, psychological, and sociological principles as a basis for improving their teaching methods.

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CHAPTER IX

THE PROGRAM OF ACTIVITIES

Course of Study Construction.—There is occurring a re-examination of curriculum content in all phases of education. Tradition is not a safe criterion of best practice. This re-examination of content, this tendency in education to develop new courses of study, is nowhere more apparent than in the field of public school physical education. Course of study construction, as nearly as possible in line with accepted techniques for general education, has been attempted by state and local departments.

The Situation in Colleges and Universities.—Contrast this, however, with the situation in colleges and universities. It is no exaggeration to state that many of the directors and instructors of physical education in our institutions of higher learning have given little or no thought to modern curriculum construction technique. It would be a rare staff indeed which could prepare for a given institution a curriculum syllabus which contained aims and objectives, detailed content for all activities, and tests and measures to determine progress. Undoubtedly, one or more of the group would not know what was wanted, where to find materials, or how to proceed. This is not altogether the fault, however, of individual staff members. The program of physical education has developed so rapidly and spontaneously that the entire field is unsettled regarding objectives, content, and method. There is very little uniformity or continuity and practically no gradation of material.

In selecting a program for college students the instructor must choose, from a rich store of subject matter, the activities which are to make up the course. Upon what basis should this selection be made? Two extreme views exist. One holds that all content should be selected on the basis of student interest. The other holds that adult opinion should guide in the selection of the program. Apparently neither is entirely right. Modern curriculum makers advocate a middle ground!

Before any curriculum in college physical education can be constructed, therefore, it is imperative that materials¹ from both age

¹ "Report of the Committee on Curriculum Making." National Society for the Study of Education. Twenty-Sixth Yearbook. Part II. Public School Publishing Company, Bloomington, Ill., 1928.

groups are collected and included. Such materials are now available in sufficient amount to make possible a determination of program of activities, with objectives, content, methods, tests, etc., presented in the form of a curriculum syllabus. This course of study might not be as scientifically correct as the accuracy demanded in a laboratory science but it would be a tremendous advance over required programs of physical education common in many institutions today. Some studies have been made to determine student interests in physical education.

The Activity Interests of College Graduates.—Oosting² found that certain college men who had graduated eight years prior to his study reported that they were now participating in nineteen activities with swimming, tennis, golf, hiking, skating, fishing, and handball showing the greatest frequency, ranking in the order listed. The amount of time spent per week in these activities ranged from 1.3 to 5.5 hours per week with a median of 2.5 hours per week. Only four sports: tennis, handball, swimming, and golf, of the first ten listed were taught these men in college. Twenty per cent of the men failed to participate in any of the above ranking activities while in college. Graduates were also asked to state the activities they would like to have learned during their undergraduate days. Golf, tennis, squash, swimming, horseback riding, handball, boxing, winter sports, hockey, skating, basketball, and volleyball were mentioned, and are listed in the order of their greatest frequency. In answer to the request for suggestions for the improvement of the college physical education programs the graduates responded as follows:

1. Give more attention to intramural activities.
2. Improve the facilities.
3. Provide more instruction in individual sports (tennis, handball, squash, golf, and swimming).
4. Provide students with information regarding the importance of physical education activities.
5. Allow greater opportunity for a wider selection of activities.
6. Promote more outdoor activities.
7. Classify students according to their respective abilities.
8. Place more emphasis on the health examination.
9. Provide less of the formal gymnasium type of work.

Smith³ found that University of Minnesota undergraduate men

²Oosting, Ray. "A Study of Graduate Opinion on Physical Education and Athletics for Men in a Selected Group of Small Colleges." Report at the Round Table Discussion on Intercollegiate Athletics, College Physical Education Association, 1931.

³Smith, W. R. "A Questionnaire Study in Regard to the Attitudes of Men Students Toward the Required Physical Education Program." Research Quarterly, March, 1933, p. 247.

listed seven activities in rank order of importance as follows: basketball, touch football, handball, squash, volleyball, swimming, and boxing.

Davis⁴ found the activity interests of two classes of freshmen men. The members of the one class preferred basketball, playground ball, touch football, tennis, volleyball, boxing, golf, handball, wrestling, and soccer in that order. All the high school training and 50 per cent of the college training of this group had been formal in nature. Some of the activities which they disliked most were heavy apparatus, calisthenics, marching, fencing and horseshoes. Another class whose training was formal in high school and largely informal in college, preferred basketball, tennis, touch football, playground baseball, wrestling, volleyball, soccer, handball, golf, and boxing in that order.

Scott⁵ reports swimming, fishing, golf, hiking, gardening, hunting, calisthenics, tennis, handball, and volleyball in that order as the activities in which 990 business and professional men participate most.

The Work of the Committee on Curriculum Research.—An outstanding example of the approach to curriculum construction from the standpoint of adult opinion is the work of LaPorte⁶ and others as members of the Committee on Curriculum Research of the College Physical Education Association. Realizing the hit or miss type of physical education program in vogue in so many colleges the association appointed the committee in 1927. In the hope that some order might be brought out of the chaos of curriculum content and a foundation laid for a more intense research study, the committee was asked to study the relative contributions of the various elements constituting the subject matter of physical education. The ultimate objective was to formulate and recommend a standardized program of physical education for the colleges.

This study represents the adult need or expert opinion approach to curriculum construction. The first step in the procedure was the evaluation of subject matter. Since no objective criteria were available to serve as a basis for making such evaluation the only alternative was to secure the opinion of highly trained leaders in the field.

The second year's report covered the college field. It was soon found, however, that a college program could not be formulated scientifically except in relation to the public school program, both in the high school and grades.

⁴ Davis, E. C. "A Study of the Interests of the Pennsylvania State College Freshmen in Certain Formal and Natural Activities." *The Research Quarterly*, Vol. IV, No. 4, December, 1933.

⁵ Scott, H. A. "Physical Recreation and Exercises for Business Men." *The Nation's Health*, Vol. IX, No. 6, June, 1927.

⁶ LaPorte, W. R. and Others. "Reports of Committee on Curriculum Research." *Proceedings, College Physical Education Association*, 1929 to 1934.

Consequently the study was expanded to include all grades and age levels. The original project called for:

1. Formulation of a set of constituent elements to compose a comprehensive educational program of physical activity.
2. Evaluation of each of these activities in terms of its developmental contribution educationally.
3. Evaluation of these various elements in relation to each other to determine the relative amount of time to be assigned in the program to each one.
4. Evaluation of these elements in relation to the age of the child so as to determine grade placement of activities by grades or school division.
5. Determination of a minimum set of standards that should be considered essential in an all-around program of physical education.

The first three or four objectives have now been considered. The second, however, has received the greatest amount of attention to date. This evaluation of the developmental contributions of each activity was based on the potential contribution of an activity to five major needs of the individual:

1. The physical or organic growth and development and improvement of body function.
2. The development of sound social and moral qualities characteristic of a good citizen.
3. The development of sound mental and emotional attitudes as a result of stimulating and satisfying activities.
4. The development of general and specific skills valuable in self-protection and the protection of others.
5. The development of skills valuable as carry-over hobbies for leisure time use.

The distribution of the evaluation over five elements insured a more careful analysis by each rater and the contribution of each activity was then determined by taking an average of the five items in each case. The program of activities for college men appears below.

Findings of the Committee.—As a result of the study the Committee on Curriculum Research suggests the following program of activities for the college division in order of preference.

- | | |
|------------------------|-----------------------------|
| 1. Swimming and Diving | 4. Basketball |
| 2. Tennis | 5. Squash and Squash Tennis |
| 3. Football | 6. Soccer |

- | | |
|--------------------------------|---------------------------|
| 7. Baseball | 19. Wrestling |
| 8. Life-saving | 20. Track and Field |
| 9. Speedball | 21. Tumbling and Pyramids |
| 10. Playgroundball | 22. Fencing |
| 11. Golf | 23. Gymnastic Dancing |
| 12. Boxing | 24. Folk Dancing |
| 13. Handball | 25. Clog and Tap Dancing |
| 14. Water Polo | 26. Heavy Apparatus |
| 15. Volleyball | 27. Horseshoes |
| 16. Touch Football | 28. Archery |
| 17. Gymnastic Games and Relays | 29. Free Exercises |
| 18. Modified Games | 30. Marching |

The committee suggests that the ten or fifteen activities toward the top of the scale should be given greater emphasis than the ones toward the bottom of the list. Another way of interpreting the list might be that if the institution were limited in facilities and teaching staff, it should attempt to provide for the upper range of activities first and add the others as opportunity offered later. (Page 187).

Analysis of the Criteria for Evaluating Physical Education Activities.—An analysis of the criteria for evaluating physical education activities should be helpful in developing a program.

I. *Physical and organic development.*—All required physical education activities should be physically wholesome. They should be vigorous but not too strenuous. Horseshoes or archery, in themselves, are not vigorous enough for most college men. Football is likely to be too strenuous for average students, unless all are properly coached, conditioned, and equipped. Certainly football does not deserve to rate in third place in the committee list above unless these conditions are fulfilled. Lacrosse, cross country, and water polo fall in the same category; they are likely to be physically unwholesome.

For women the same may be stated for basketball—men's rules, certain track and field events, heavy apparatus, certain swimming events, and others. Archery is hardly vigorous enough for the average college freshman or sophomore girl unless it is supplemented with activities of a more vigorous type.

II. *Social and moral development.*—At present there is no scientific evidence that required activities, as now conducted, are developers of social traits. It seems important at least that the activities should require the exercise of courage, cooperation, and other social and moral learnings, and, therefore, most of them should be suited to large numbers. For the men, body contact "anti-softener" activities should be emphasized. It should be noted that team games of this type are rated high in the study of the committee mentioned above. As would

be expected, marching, calisthenic exercises, and fencing rate low on this criterion.

<i>1st Quarter</i>	<i>2nd Quarter</i>
Soccer	Boxing
Touch Football	Wrestling
Track	Fencing
Tennis	Handball
Volleyball	Tumbling
Swimming	Basketball
Life-Saving	Swimming
Basketball	Basketball—F. & V.
Handball	Fencing—F. & V.
Football—F. & V.	Wrestling—F. & V.
Crew—F. & V.	Crew—F. & V.
Wrestling—F. & V.	Track—F. & V.
Cross-Country—F. & V.	Swimming—F. & V.
Track—F. & V.	
Swimming—F. & V.	
<i>3rd Quarter</i>	<i>4th Quarter</i>
Boxing	Softball
Wrestling	Tennis
Fencing	Volleyball
Handball	Track
Tumbling	Swimming
Basketball	Speedball
Swimming	Life-Saving
Basketball—F. & V.	Basketball
Fencing—F. & V.	Tennis—F. & V.
Wrestling—F. & V.	Baseball—F. & V.
Crew—F. & V.	Crew—F. & V.
Track—F. & V.	Track—F. & V.
Swimming—F. & V.	Swimming—F. & V.
	Football—V.

THE PHYSICAL EDUCATION ACTIVITIES PROMOTED AT COLUMBIA COLLEGE.

III. *Psychological development*.—This means that activities should be *interesting* to college men and women. Again marching, calisthenics, fencing, and folk dancing for college undergraduates are at the bottom of the list. There is little or nothing in such activities to catch the interest or stimulate the imagination of young adults. In addition, activities should be comparatively *easy to learn*. American intercollegiate football may be too complicated for some college freshmen or sophomore men to enjoy.

IV. *Safety development*.—This criterion may overlap the first in the minds of many individuals. If the activity is considered from the standpoint of the hazards involved by participation then touch-football, for example, is the most dangerous of all activities to promote. On the other hand, if the activity is considered from the standpoint of its contribution to the development of general and specific skills

valuable in self protection and the protection of others it should be given a higher rank. Similarly, swimming would rank low if considered from the standpoint of the hazards involved and high for its values in developing self protection and protection to others. In the secondary school field the activities which are most hazardous are touch football, heavy apparatus, football, lacrosse, wrestling, and tumbling in the order listed. Some of Eastwood's conclusions⁷ follow:

1. The ankle, hand, and knee are the parts of the body most frequently injured in women's sports. These injuries usually involve joints.

2. Joint injuries to the ankle and knee are more prevalent in men's sports.

3. In football, injuries to the knee, ankle and shoulder joint were most frequent.

4. The very hazardous women's sports are heavy apparatus and riding, while the highly hazardous sports are field hockey, basketball and soccer.

5. Football, horse polo, and wrestling rank as highly hazardous men's sports.

6. With better leadership, facilities, and equipment accidents to women may be reduced 56.5 per cent and the days lost 52.5 per cent.

7. Thirty-one per cent of the men's sports accidents and 40.3 per cent of the days lost from these injuries can be wholly or partially prevented.

8. In football 23.6 per cent of the accidents and days lost are due to inadequate leadership and faulty equipment and facilities.

9. Practically all of the high ranking causes of serious accidents in women's and men's sports, as well as football, were due to causes which could have been prevented or minimized by better leadership and adequate facilities.

10. A physical examination before participation in intramural, intercollegiate, or class instruction reduces the accidents per one thousand exposures in men's activities.

11. The use of student leaders reduces the accident exposure rate for men.

12. The college administration should pay part of the costs for all injuries if the days lost rate per one thousand exposures is to be reduced.

V. *Recreational development*.—Swimming, golf, tennis, handball, and squash racquets naturally rate high when considered from the

⁷ Eastwood, F. R. "Causes of College Sport Accidents; Preliminary Findings from a Study of Safety in College Physical Education." *The Research Quarterly*, Vol. 5, No. 3, October, 1934. Pp. 68-69.

standpoint of this criterion. Horseshoes, too, would rate high from a pure recreational standpoint although the activity is not vigorous enough for college undergraduates unless other activities are included in the program of each student who selects horseshoes. Archery probably belongs in the same category.

Another criterion not used by the Committee on Curriculum Research but one that is important for college physical educators is the matter of administering or promoting the activity.

VI. *Facility of Administration.*—Ideally, activities should be chosen and justified on the basis of the contribution to the physical, mental, social, safety, and recreational development of young people. Practically, however, there are bound to be local factors which will influence the selection of activities. Space requirements, amount of equipment necessary, cost of promotion, instruction and conditioning needed, and facilities available are factors to be considered. Again, football would not be selected as an activity for required physical education, unless sufficient space were available to teach the sport to large numbers, and the budget provided for the purchase of adequate protective equipment. Moreover, it would not be a safe or physically wholesome activity unless well trained staff members were available to instruct and condition the students. On the other hand, speedball, basketball, playgroundball, and similar activities cost practically nothing to promote.

The list suggested below seem to meet best the criteria for the selection of the activities for required physical education for men in colleges and universities. The activities are not listed in rank order of importance but the more desirable ones, and the ones which should form a nucleus around which the program should be built, are placed first. It is proposed here that the first twelve or fifteen activities, with some variations, should constitute the required program for college men.

Activities for Men.—

- | | |
|---|--------------------------------|
| 1. Basketball | 11. Apparatus and tumbling |
| 2. Speedball, touch football, or soccer | 12. Tap and gymnastic dancing |
| 3. Playgroundball | 13. Track and field |
| 4. Swimming | 14. Boxing |
| 5. Golf | 16. Wrestling |
| 6. Tennis | 16. Games and Relays |
| 7. Handball | 17. Outdoor Camping Activities |
| 8. Bowling | 18. Horseshoes and Quoits |
| 9. Volleyball | 19. Badminton |
| 10. Squash racquets | 20. Ping Pong |
| | 21. German bat ball |

- | | |
|----------------------------|------------------|
| 22. Hand and paddle tennis | 27. Lacrosse |
| 23. Tenikoit, etc. | 28. Fencing |
| 24. Football | 29. Marching |
| 25. Baseball | 30. Calisthenics |
| 26. Water Polo | |

The team games listed among the first ten activities meet reasonably well all criteria. They are vigorous but not too strenuous, they are interesting and easily learned, they are suited to large numbers, and they require very little equipment. Moreover, facilities are available for them in most institutions. Speedball, where it has been tried, has proven an excellent fall activity. It is valuable in that it is easier to learn than soccer and has far greater possibilities as a game than either touch football or soccer. If proper conditions permit, football, baseball, lacrosse, and water polo might be given a more prominent place in the program. Horseshoes, badminton, ping pong, and similar sports may well be added to a program after the more vigorous activities have been provided.

The individual sports listed among the first ten activities, also meet the criteria. Although they may not contribute so much to social development, they offer more than team games on the recreational side. Bowling would deserve a high rating only if alleys were available in the gymnasium. It is surprising the number of new physical education buildings which have no provision for this excellent activity. Experience with it as part of a college program has demonstrated its worth for both men and women. In the writer's opinion handball is more desirable than squash racquets for college men because it is more vigorous. Fencing is rated low because it is not a natural activity and has very little appeal in most sections of the country.

Activities For Women.—Many of the activities suggested above for men are equally desirable for women.

Owen⁸ found that swimming tops the list of sports most emphasized by departments of physical education in certain eastern colleges for women. Practically every known sport was included, save football, boxing, and wrestling. The individual sports, such as swimming, tennis, golf, fencing, archery, and horseback riding are rapidly rising in prominence. Directors are insisting that college girls become proficient in at least one, since participation after college graduation is more feasible in individual sports than in team games.

⁸ Owen, Janet. "Sports in Women's Colleges." New York Herald Tribune, Inc., 1932.

Coops⁹ recommends the following activities for high school girls. They are arranged in three general groups and in the order of their importance.

I. *Individual and Dual Athletic Activities.*—

a. The most important activities in this group are:

1. Swimming
2. Tennis
3. Hiking
4. Golf
5. Horseback Riding
6. Archery

b. Other activities recommended but judged less important than the first six are:

7. Deck Tennis
8. Horseshoes
9. Dashes (running races)
10. Handball
11. Badminton
12. Bowling
13. Skating

c. Activities involving elements of team games are recommended after those above are provided.

14. Basketball throw for distance
15. Baseball throw for distance
16. Basketball foul shooting

II. *Team Games of a High Degree of Skill.*

a. The three most important are arranged in rank order:

1. Volleyball
2. Baseball
3. Basketball

b. The three games below are recommended next but only providing modification in rules are made concerning length of playing period, size of field, and amount of substitution.

4. Field Hockey
5. Soccer
6. Speedball

III. *Team Games of a Low Degree of Skill.*

a. Recommended as preliminary games involving the practice elements of games requiring a high degree of skill.

1. Kickball

⁹ Coops, Helen L. High School Standards in Girls Athletics in the State of Ohio. Ph.D. Dissertation, Teachers College, Columbia University, New York, 1933. (Published Privately.)

2. Dodgeball
 3. Captainball
 4. Keep Away
 5. Centerball
 6. Endball
- b. A more complete list of games, usually not so popular as the six denoted above, are included:
7. German Batball
 8. Newcomb
 9. Libertyball
 10. Punchball
 11. Overtake
 12. Crisscross
 13. Obstacle Relays
 14. Giant Basketball
 15. Ninecourt Basketball
 16. Pin Guard
 17. Hit Pin Baseball
 18. Line Soccer
 19. Bombardment

Barr¹⁰ reports a study of the activity program for women in sixty one institutions. She found individual sports ranked first in importance, followed by gymnastics, rhythmic, team sports, and aquatic in that order. Eighty seven activities were found in the entire group of colleges. Swimming, archery, individual gymnastics, character and folk dancing, baseball, basketball, and field hockey were found in a majority of the institutions, regardless of size. The small colleges alone emphasize tumbling, the medium size colleges add riding and volleyball to the above list, while the larger universities include boating and natural dancing.

Table II shows the emphasis on activities found by Barr to be common to all programs.

Barr concludes that:

1. The range of activities is wide.
2. The most important activities in the various programs are, in order: individual gymnastics, character dancing, swimming, diving, fieldball, tennis, golf, Danish gymnastics, folk dancing, and apparatus.
3. The organization of the program is definitely toward a combined form. This form prescribed one or more activities and allows the student to elect the remainder.

¹⁰ Barr, Margaret C. "Résumé of the Physical Education Activity Program in Colleges for Women." *Research Quarterly*, Vol. 4, No. 3, October, 1933, p. 117.

TABLE II
EMPHASIS ON ACTIVITIES COMMON TO ALL PROGRAMS

Activities	Numbers of colleges offering	Rank of activity according to number of colleges	Average number of days taught	Per cent of time in program	Rank as to per cent of time
1. Tennis	55	1	41.18	24.74	6
2. Basketball	54	2	30.70	18.90	20
3. Archery	52	3	35.72	21.38	13
4. Field hockey	51	4	28.07	17.28	23
5. Baseball	50	5.5	32.42	19.96	15
6. Swimming	50	5.5	46.58	28.07	3
7. Character dancing	48	7	48.45	29.21	2
8. Volleyball	45	8	31.48	19.39	18
9. Life-saving	42	9	35.97	21.54	12
10. Folk dancing	39	10	37.82	22.61	9
11. Individual gymnastics	33	11	52.78	32.44	1
12. Golf	31	12	40.90	24.57	7
13. Track and field	27	13	30.81	18.97	19
14. Diving	26	14.5	46.30	27.90	4
15. Soccer	26	14.5	29.69	18.28	21
16. Danish gymnastics	25	16	39.64	23.80	8
17. Tumbling	24	17	32.00	19.71	16
18. Deck tennis	21	18	29.04	17.88	22
19. Stunts	20	19	31.60	19.46	17
20. Hiking	18	20	26.66	16.42	24
21. Pyramids	13	21	34.27	20.49	14
22. Speedball	11	22	37.36	22.33	11
23. Apparatus	9	23	27.77	22.58	10
24. Fieldball	7	24.5	45.43	27.36	5
25. Natural gymnastics	7	24.5	25.71	15.83	25

The "average total number of days available" used in computing the percentage of time is 162.

This table should be read as follows: Tennis is taught in 55 of the colleges, ranking first in frequency of occurrence. It is taught an average of 41.18 days in the year, which is 24.74 per cent of the average total teaching time available, and ranks 6 in amount of emphasis on this list of activities.

4. The culmination of the program in the various activities is widespread and general.
 - a. The activities taught are not influenced by the size of the college.
 - b. The geographical location of the college has little effect on the type of activities.
 - c. The form of organization affects the number of activities, but apparently not the content.
 - d. Team sports, individual sports, and rhythmic are found most frequently.
 - e. The program is not typical of the colleges for women alone.

Johnson¹¹ suggests a battery of ten or more activities for college women appropriate to each season of the year and as many more as facilities and equipment will permit. This program should consist of large team games, small team games, individual sports, and rhythmic activities. She proposed that the students should be required to show average proficiency in two or more activities, eight in all, selected by her from each group. Furthermore, she argues that no type of activity should be required of all students unless perhaps it be swimming.

As a result of the participation in the program of physical education at Barnard College each student is expected, when she graduates, to have:¹²

1. *Average skill* or *better* in at least two individual sports and games (swimming might be one of these).
2. *Average ability* in one team game—valuable because of the social and emotional development which might come from participation in a team game, as well as for physical reasons.
3. *Average ability* in a rhythmic activity.
4. *Ability to assume* and *maintain* a good standing position.
5. *Normal* health habits and positive health attitudes toward health.
6. *Absence* of *remediable* defects.
7. *Knowledge* which will help her to live correctly.
8. A *wholesome* attitude toward play and recreation and habits of play.
9. The instincts and reactions of a sportsman.

Emphasis is placed not only upon *knowledge* and *skills* but upon *habits* and *attitudes*.*

A similar standard has been proposed for college men in required activities.¹³ The list suggested below seems to meet best the criteria for the selection of required physical education activities for women in colleges and universities. The activities are not listed in rank order of importance but the more desirable ones, and the ones which should form the nucleus of a program for women, are placed first.

1. Swimming and Water Activities
2. Dancing,—natural, tap, etc.

¹¹ Johnson, Georgia B. *Organization of the Required Physical Education for Women in State Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1927.

¹² Wayman, Agnes R. *Syllabus in Physical Education*, Barnard College, Columbia University. Edwards Brothers, Inc., Ann Arbor, Michigan, 1931.

* See page 193 for activities promoted.

¹³ Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1932, Section V, pp. 66-90.

3. Tennis
4. Playground Baseball
5. Golf
6. Basketball
7. Handball or Squash Racquets
8. Field Hockey
9. Bowling and Archery
10. Speedball or Soccer (modified)
11. Volleyball
12. Camping Activities
13. Horseback Riding
14. Individual Sports { Ping Pong
Paddle Tennis
Badminton
Captain ball,
etc.
15. Group Games
16. Tumbling
17. et cetera

ACTIVITIES LISTED BY SEASON

Activities vary with the season and the following electives may be used to satisfy the physical education requirement.

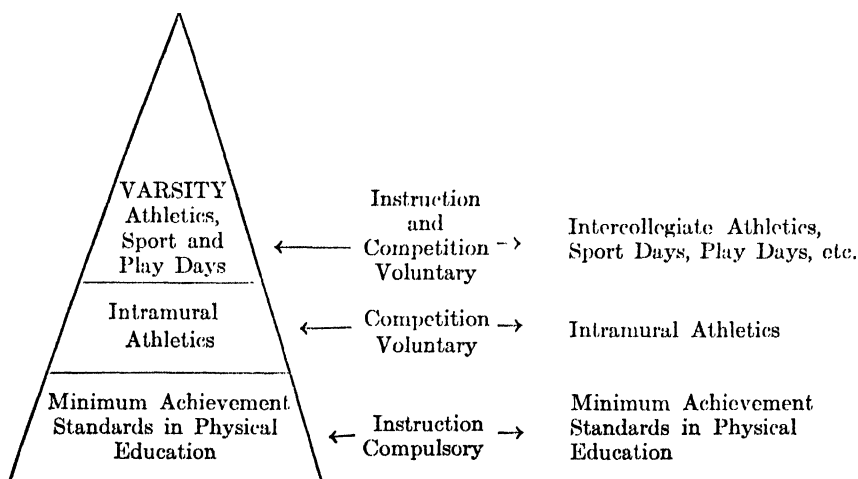
<i>September—November</i>	<i>November—February</i>
*1. archery 2. golf *3. tennis *4. tenikoit *5. swimming 6. track *7. volleyball 8. games 9. roof	*1. natural dancing *2. clogging *3. tap dancing *4. folk dancing *5. fencing *6. basketball *7. volleyball 8. stunts and tumbling *9. swimming *10. water games 11. games
<i>February—Greek Games</i>	<i>After Greek Games</i>
*1. natural dancing *2. clogging *3. tap dancing *4. folk dancing *5. fencing *6. baseball *7. Greek Games Dancing *8. Greek Games Athletics *9. volleyball *10. swimming 11. games	*1. natural dancing *2. swimming *3. archery *4. tennis *5. tenikoit 6. golf *7. volleyball *8. baseball 9. games

* May be used also to satisfy GROUP requirements.

The Physical Educational Pyramid.—The required program of physical education should be considered in relation to other phases of the program, particularly intramural and intercollegiate athletics. It might well be considered the base of a physical education pyramid which includes all intramural and intercollegiate athletics.¹⁴ The emphasis here should be on INSTRUCTION, supplemented by some competition within and among classes.

The intramural program should represent the middle portion of the pyramid. It is the COMPETITIVE phase of physical education for students of average ability. Emphasis here should be competition rather than instruction. Activities promoted should parallel as closely as possible those offered in the required program. The two are supplementary. Because of the lack of time, facilities, and personnel, both are necessary. If more time, space, and instructors were available the two could be merged. Competition could then constitute a fair share of the required program, or stating it another way, instruction could be given in all intramural activities. Skills which may be put into practice in the intramural groups should be taught in the short time available in the required program.

Intercollegiate athletics, sport days, and play days should represent the peak of the pyramid. The emphasis here should be on INSTRUCTION AND COMPETITION. Unfortunately, because of



A COLLEGE PROGRAM OF PHYSICAL EDUCATION.

Physical Education Pyramid
for College Men and Women

An Ideal Program of Physical
Education for All Students

¹⁴ Hughes, W. L. "A More Unified Administration of College Health, Required Physical Education and Athletics." *Journal of Health and Physical Education*, February, 1933.

lack of funds and facilities, only students of superior ability benefit from this phase of the program. Ideally, it would be desirable to provide the same opportunities for all students. The program of physical education would then be represented by a rectangle (page 194).

A Curriculum Syllabus.—A curriculum outline or syllabus in physical education should be provided in every college and university. Furthermore, this material should be developed by the entire staff working as a committee for the construction of a course of study. Every member of the staff should be expected to be willing and able to contribute. The athletic coach, who assists with the required activities, may not feel equal to the task but if he is willing to learn he can be a very useful member of the committee. Harap¹⁵ suggests techniques in curriculum construction which should be helpful to a staff in physical education attempting to develop a syllabus. Other well known references are available.¹⁶

One of the few attempts known to the writer to prepare a complete curriculum for men in college physical education has been made at the University of Illinois. The syllabus is prepared by Staley¹⁷ with the cooperation of sixteen staff members. This group has determined objectives, general and special requirements, tests and examinations, and the method of determining the final grade for the various activities in the program. A few pages from the syllabus illustrate the nature of the materials.

THE UNIVERSITY OF ILLINOIS

PHYSICAL EDUCATION 23, ADVANCED SWIMMING

Explanation of the Course

General Regulations. This course is open only to sophomore students who can swim 50 yards. All students are required to furnish the following equipment: swimming cap.

The Objectives. The ultimate (conduct) objectives, in other words, the activities taught in the course are given below:

I. Swimming

Swim the breast stroke

Swim the crawl stroke

Swim the back stroke

¹⁵ Harap, H. *The Technique of Curriculum Making*. The Macmillan Company, New York, 1929.

¹⁶ a. The National Society for the Study of Education. "The Foundations of Curriculum Making." *The Twenty-sixth Yearbook, Part II*. The Public School Publishing Company, Bloomington, Illinois, 1929.

b. Hopkins, L. T. *Curriculum Principles and Practices*. B. H. Sanborn and Company, Chicago, 1929.

¹⁷ Staley, S. C. and Others. "The Curriculum in Physical Education for Men at the University of Illinois for 1931-1932." (Mimeographed.)

II. Turning

Execute the breast stroke turn

Execute the crawl stroke turn

Execute the back stroke turn

III. Diving

Execute a racing start

Execute a front dive

Execute a back dive

Execute a front jackknife dive

Execute a back jackknife dive

IV. Life Saving.

Tow another person of the same weight with the following holds:

Head carry

Cross carry

Tired swimmer's carry

Secure holds on another person using the following approaches:

Under water

Front

Back

Term Paper, Final Examination and Final Grade. Each student will be asked to turn in a paper on the third from last class meeting presenting a complete description of each of the items included in the list of objectives (activities) given above. This paper will be graded on the basis of one point for each item satisfactorily described.

A final examination will be given during the regular examination period. The examination will include the performance of three groups of activities as follows, each of which will be graded as indicated.

1. Dive off end of pool and swim 25 yards with the breast stroke, turn and swim 25 yards with the back stroke, turn and swim 25 yards with the crawl stroke. Each student will be timed for the total performance and awarded points as follows:

Less than 1 min. 3 sec.	65 points
1 min. 3 sec. to 1 min. 10 sec.	60 points
1 min. 10 sec. to 1 min. 20 sec.	55 points
1 min. 20 sec. to 1 min. 30 sec.	50 points
1 min. 30 sec. to 1 min. 40 sec.	45 points
Complete the swim	40 points
2. Perform each of the four springboard dives. Each performance will be graded on the basis of 5 for excellent, 4 for good, 3 for fair, 1 for poor, and 0 for non-performance.
3. Dive into the pool, approach and tow a person of the same weight by each of the three methods for approaching and towing a person for twenty yards. Each performance will be graded on the basis of 5 for excellent, 4 for good, 3 for fair, 2 for poor, and 0 for non-performance.

The points received for (1) the term paper, (2) the swimming test, (3) the diving test, and (4) the life-saving test will be totalled. The final grade will be awarded on the following basis:

100 points and over	A
90-99 points	B
80-89 points	C
70-79 points	D
Less than 70 points	E

THE UNIVERSITY OF ILLINOIS PHYSICAL EDUCATION 27, APPARATUS STUNTS

Explanation of the Course

General Regulations. This course is open only to sophomore students. All students are required to furnish the following equipment: gray sweat shirt, gray sweat pants, soft-soled shoes, and white woolen socks.

The Objectives. The ultimate (conduct) objective of the course is "Performing 24 Apparatus Stunts." The immediate objectives, in other words, the specific activities taught in the course are given below:

- I. Stunts on the Horizontal Bar
 - a. Backward Hip Circle
 - b. Kip
 - c. Hock Swing Dismount
 - d. Forward Heel Circle
 - e. Angel Swing
 - f. Double Knee Circle Forward
- II. Stunts on the Flying Rings
 - a. Backward Dislocation
 - b. Double Backward Cut Off
 - c. Double Forward Cut Off
 - d. Backward Uprise
 - e. Single Cut and Catch (L. & R.)
 - f. Swing and $\frac{1}{2}$ Twist
- III. Stunts on the Parallel Bars
 - a. Swing to Shoulder Stand
 - b. Back Shoulder Roll
 - c. Kip at End of Bar
 - d. Kip from Upper Arm Hang
 - e. Shoulder Stand Dismount
 - f. Swing Stand
- IV. Stunts on the Side Horse
 - a. Leg Scissors (R. & L.)
 - b. Single Leg Circles (R. & L.)
 - c. Neck Spring
 - d. Thief Vault to Half Lever
 - e. Leg Circle Mount
 - f. Double Rear Dismount

Final Examination and Final Grade. A final examination will be given during the regular examination period. The examination will cover all the activities listed under the heading objectives. Each student must execute each stunt to receive performance credit. Each student will be permitted to try each stunt twice. The final grade will be awarded according to the following scale:

Performing less than 12 stunts	E
Performing 12-13-14 stunts	D
Performing 15-16-17 stunts	C
Performing 18-19-20 stunts	B
Performing 21 or more stunts	A

Order of Presentation of Activities

First Meeting.

Stunts on the Horizontal Bar

Second Meeting.

Stunts on the Flying Rings

Third Meeting.

Stunts on the Parallel Bars

Fourth Meeting.

Stunts on the Side Horse

Fifth to Thirtieth Meeting.

Practicing the stunts at will

Unquestionably, this is one of the few attempts on the part of college men physical educators to prepare a course of study. Regardless of whether one agrees with the activities selected or the objectives, requirements, and tests, the program developed deserves commendation as a pioneer effort. Wayman¹⁸ also has made a contribution of the same nature.

It is important to distinguish between a syllabus containing course content material and manuals covering administrative details or bulletins of information. The latter are useful and are not uncommon. The former are indispensable if we are to develop a systematic, progressive program for which we desire credit toward graduation. No coach would think for a minute of appearing before his squad without a detailed outline or plan of procedure for the first day, the first week, and all days and weeks to follow throughout the fall season. He may or may not have this information down on paper although a majority undoubtedly do, but his teaching objectives are clearly in mind. He knows exactly how he is going to teach kicking, blocking, and end play. He knows on a given afternoon approximately the time he will devote to individual contact work, scrimmage, etc.

¹⁸ Wayman, Agnes R. Op. cit.

Contrast this with the common practice in required classes. Basketball is the activity. After a few days on some simple fundamentals teams are formed and the instruction often consists largely of "whistle blowing." When the time originally allotted to basketball has passed the groups are required or permitted to elect something else. No definite objectives are formulated, no achievements are measured. Syllabi should be provided which contain objectives, course content, and achievement tests. Detailed procedure should be left to the initiative of individual instructors. Detailed daily lesson plans in written or printed form may not be necessary. On the other hand, outlines of the work to be covered are desirable and feasible.

Summary.—Curriculum research and course of study construction is one of the major needs of college physical education. The opinions of physical educators regarding desirable activities for college men recently have been determined but there is still need for further study of opinions regarding a program for women. Moreover, more data should be collected regarding the interests of both men and women in physical education activities.

Meanwhile, directors and staff members in college physical education should not await a standardized program to be worked out by scientific investigation. Everywhere there should be an attempt to select activities, determine objectives, formulate detailed course content, and devise achievement tests. Only by so doing can physical education hope to gain its rightful place in the college curriculum.

Administrative Standards and Policies.—This chapter may be summarized by suggesting standards regarding the program of activities for college men and women:

In college physical education there is need for the re-examination of program content and the development of courses of study, which include objectives, content, suggested methods, and tests of progress and achievement.

Criteria or standards for judging the value of an activity should be considered before definitely deciding upon the program.

Suggested criteria for evaluating an activity are: its contribution to physical and organic development, its contribution to social and moral development, its contribution to psychological development, its contribution to safety development, its contribution to recreational development, and finally, the facility with which it can be administered and promoted.

Another way of considering the criteria for judging the value of activities is as follows: Are they vigorous but not strenuous?; are they safe without elaborate equipment?; do they provide social situations?; are they interesting, and easy to learn?; are they useful in

that they can be played after graduation from college?; are they suited to large numbers?; and can they be played on a comparatively small space?

Team games recommended for men are: basketball, speedball, soccer, touch football, playground baseball, volleyball, baseball, and such games as football and lacrosse if proper equipment, conditioning and coaching can be provided.

Individual sports recommended for men are: golf, tennis, swimming, handball, squash, racquets, bowling, boxing, wrestling, fencing, horseshoes, and ping pong.

Team games recommended for women are: basketball, baseball, volleyball, field hockey, speedball, and soccer.

Individual sports recommended for women are: swimming, tennis, golf, hiking, horseback riding, archery, bowling, horseshoes, badminton, deck tennis, handball, squash racquets, skating, etc.

The required physical education classes should be supplemented by a program of intramural and intercollegiate athletics.

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CHAPTER X

RESTRICTED AND RECONSTRUCTIVE PHYSICAL EDUCATION

The Modern View.—Programs specifically adapted to meet the needs of students who are permanently or temporarily handicapped physically have been variously called corrective, therapeutic, orthopedic, medical, or individual gymnastics. Restricted, reconstructive, and individual physical education are also common designations. The title "Corrective Gymnastics" had a bad psychological effect upon students required to take the course. The words therapeutic, orthopedic, medical, or gymnastics do not designate correctively the modern program required of physically handicapped students. Individual gymnastics no longer is acceptable because a gymnastic program of corrective exercises is not adequate. Even the term Individual Physical Education is likely to imply a program of exercises and activities which are entirely individual in nature. This certainly should not be the case. Every physically handicapped student, as far as is possible without harm to the individual, should be given the opportunity to participate and acquire skills in team games and group activities. For want of a better term "*Restricted and Reconstructive Physical Education*" is used here to designate a program the nature of which may be individual, restricted, corrective, therapeutic, medical, or a combination of all these.

The need for a program of activities in the correction of defects has been recognized for centuries. In some colleges this program has tended to become a hospitalized procedure rather than an educational experience. The clinical work for individual corrections should be administered by orthopedic specialists who carry on individual instruction under the close supervision of a physician and surgeon. Such a procedure is corrective or orthopedic gymnastics, not physical education. The surgeon and orthopedic specialist should correct deformities. It is admitted that the *correction of defects* is the function of the medical profession, but the *physical education* of the physically handicapped is the function of educators. This educational process should go on through the use of activities which approximate as closely as possible the regular program and which are compatible with the physical defect.

The responsibility for a program of restricted and reconstructive

physical education rests with health education and physical education. Health education should accept as an important motivating force the development of a sound, efficient, and beautiful body, while physical education must use its program to develop sound, efficient, and beautiful bodies along with its promotion of joy through activity. The difference between the regular program and the restricted and reconstructive program of physical education is one of direction and aim, rather than one of materials.

Qualifications of the Teacher.—In a large university one person for men and another for women should be designated as director or instructor of the restricted and reconstructive phase of the program. In smaller institutions one or two members of the staff must share this responsibility along with other duties. In any case, it is important that instructors have a real interest in the work and in individuals. Knowledge of anatomy, physiology, and mechanics of movement are essential so that deviations from the normal can be recognized. Acquaintance with the principles underlying muscular activity, mechanical adjustment, and support, and an understanding of physical therapy will be necessary. Knowledge of psychology, mental hygiene, and methods of teaching are indispensable in a program of this type. Ability to give an orthopedic examination, and to understand a physician's diagnosis of other defects in their relation to physical activity is important. Ability to promote interesting and worthwhile programs is assumed.

Motivation.—Regardless of the type of program conducted certain psychological principles should be kept in mind. In the first place, the atmosphere in relation to this program should be a happy, joyous one and the value of such an attitude can hardly be over-rated. In the second place, there should be a reason for the various exercises and activities in the program which each individual student can grasp and understand.

Objectives.—Various objectives have been proposed for this program but it is clear that the general *educational* objectives are the same for the physically handicapped as they are for the physically "normal" students. It is even more important that we develop the organic systems, game skills, play habits and attitudes, and desirable standards of conduct in students with physical defects. This four-fold development is largely denied in a program devoted purely to individual corrective exercises.

More specifically, the *administrative* objectives may be stated as follows:

1. To acquaint the student with the exact diagnosis of his physical condition.

2. To give the student an understanding of the significance of the defect as it affects his physical, mental, social and emotional well-being.
3. To arrest, maintain, improve, or remedy the student's physical defect.
4. To protect the student from injury by prescribing activities compatible with the defect.
5. To provide the opportunity for participation in a program of team games, individual sports, rhythmic, aquatic, etc., which approximate as closely as possible the program prescribed for the regular classes.

Metcalf¹ classifies objectives as: individual contacts between instructor and student; causation of the particular handicap of the individual; prevention of a more serious defect; correction of certain remediable defects within limits; construction or re-education; protection by observation, supervision, and limitation of activities; and education of the student concerning the nature of the case. He would emphasize the following educational aspects of the program:

"To develop in all the students an intelligent understanding of their present defects, and the reasons for the particular activities prescribed.

To develop in the individual the kinesthetic sense and habit of correct body mechanics which will contribute to his greatest efficiency.

To arouse sufficient interest in the students so they will carry on the prescribed activities beyond the classroom.

To bring as many of the students as possible, as soon as possible, to that standard of physical efficiency whereby they may return to the regular required courses of physical education.

To substitute, whenever possible, game and sport activities in place of more artificial calisthenic exercises (provided they are found equally valuable by kinesiological and physiological analysis), thereby capitalizing interest and increasing the carry over value.

To invent games (where they are lacking) physiologically and kinesiological sound from the standpoint of individual needs.

To find and teach one or more sports safely applicable to his specific condition. This should be a sport in which he can participate with great benefit throughout his entire life, and a means of counteracting the inferiority complex which tends to be prevalent in this physically defective.

¹ Metcalf, H. G. "Objectives of Individual Physical Education for College Men." *The Journal of Health and Physical Education*, Vol. 1, No. 9, November, 1930, p. 10.

To help each handicapped individual better to adapt himself to life conditions in and out of school."

It will be seen that the corrective program of former years dealt with relatively unimportant matters. Young adults, by the time they reach college or university, have probably largely compensated for any physical defect they possess. Scott² found from the health examination records of 1,134 University of Oregon men that 62.9 per cent were in good health; 9.8 per cent possessed physical or organic defects serious enough to make inadvisable the participation in a normal physical education program; and .45 per cent were found to have serious defects which necessitated a very restricted exercise program.

Apparently very few individuals reach the university with serious organic defects. On the other hand, from 5 per cent to 95 per cent indicates the range of opinion regarding the need for improvement of posture and other minor defects. But there is everywhere serious doubt about the possibility of making any worthwhile structural changes after an individual has attained college age. Moreover, many such defects in no way, or only very slightly, affect the efficiency of an individual. Rogers³ states that after years of experience with school children and college students, in addition to 15 years' experience in an orthopedic clinic, he could not see where he had made any approach toward the supposedly better end of the posture scale, except possibly for a somewhat better carriage of the head and shoulders.

Strangely enough there is very little evidence that all the efforts directed toward posture training are accomplishing much, particularly among students of college age. In the past, the fact has often been disregarded that posture is concerned with more than mere muscle training. Mental attitude and nutrition were seldom considered. On the other hand, there is evidence which seems to indicate that posture is hereditary, and that it remains very much the same throughout life except where modified by accident, disease, malnutrition, occupation, or superfluous fat. Furthermore, students can adjust to life both in college and thereafter even if their spines are slightly crooked or shoulders uneven.

The Newer Emphasis.—The fault of former programs was that they were chiefly concerned with matters of little importance. Many of the defects only slightly interfered with normal student life. The former emphasis on formal exercises disregarded the need for the de-

² Scott, H. A. "Supervised Exercise Corrects Defects of University Men." *The Nation's Health*, October, 1926.

³ Rogers, J. F. "Corrective and Restricted Exercises." *Proceedings, Society of Directors of Physical Education in Colleges*, 1930, pp. 33-34.

velopment of organic vigor and desirable social and moral learnings. Moreover, it often caused a life long distaste for all physical education. Desirable skills, habits, and appreciations were neglected.

The newer conception of this program places the burden of remedial responsibility on the student. The emphasis is now objective rather than subjective. In addition to practice in corrective exercises there is provided opportunity to acquire skills in team games and individual, recreative sports. The interest of the student is sought so that he may understand his own handicaps, adjust to them, and live more fully and happily because of this knowledge and understanding.

Defects.—Restricted and reconstructive physical education, then, should be provided for those individuals who are physically handicapped, whether permanently or temporarily. Students exhibiting one or more of the type of defects listed below are usually assigned to this program.

Digestive disturbances.

Fatigue, particularly chronic fatigue.

Glandular disturbances.

Heart conditions. Functional and organic disturbances.

Hernia cases.

Infantile Paralysis.

Injuries—amputations and other permanent injuries and convalescing accident cases.

Joints, weak, stiff and tubercular and chronic dislocation.

Kidney disorders.

Malnutrition.

Menstrual disturbances—of a severe nature.

Nervous disorders of a serious type.

Post-operative cases.

Postural deformities of a serious nature.

Health Examination.—The classification of students into A, B, C and even D and E groups was discussed under Health Service (Chapter IV). Restricted and reconstructive physical education should be required of all students who are classified as C or below. If several physicians have conducted various parts of the examination, one physician, preferably the director of health education, should review the complete record of the student and give him an inventory of his condition. He should check the whole examination, sum up the advice, plan a special program, and make an appointment for a later report and conference (page 208). Students classified as C or below should be referred to the person or persons in charge of the restricted physical education. The forms shown on pages 207 to 208 indicate the various types used in reporting the results of health examinations.

Results of your Physical and Medical Examination

Name..... Date.....

Your Health Grade is.....

Your Physical Education Grade is.....

General condition is.....

Your measurements indicate that your strength is.....

" " " " " expansions are.....

" " " " " lung capacity is.....

Defects, to be Corrected

- | | |
|-----------------|------------------|
| 1. Over weight | 9. Heart |
| 2. Under weight | 10. Lungs |
| 3. Posture | 11. Haemoglobin |
| 4. Curvature | 12. Skin |
| 5. Feet | 13. Kidneys |
| 6. Eyes | 14. Constipation |
| 7. Teeth | 15. Menstruation |
| 8. Thyroid | 16. |
| | 17. |

Your active cooperation is expected in overcoming your remediable defects as soon as possible. Keep your machinery fit.

THIS FORM IS GIVEN THE STUDENT AT THE COMPLETION OF THE HEALTH EXAMINATION.

Individual conferences between instructor and student should precede the assignment to any activity.

Program of Activities.—The following list contains some of the activities which are commonly used today in restricted and reconstructive physical education classes:

Archery	Golf driving or	Playgroundball
Badminton	putting	Ping pong
Bait-casting	Handball	Rest
Bowling	Hand tennis	Rope spinning
Croquet	Hiking	Shuffleboard
Deck tennis	Horseshoes	Swimming
Fly casting	Nature study	Squash
Golf	Paddle tennis	Volleyball

OHIO STATE UNIVERSITY

STUDENT HEALTH SERVICE
Hayes Hall

HEALTH PRESCRIPTION

For M.
....., 193 ..

The following corrective measures are advocated:

MEDICAL—(Including recommendation for Specialist)

DIET—

PERSONAL HYGIENE—Sleep—Ventilation—Habits—Clothing—Stimulants—

EXERCISE—WORK—REST—RECREATION—

Return for subsequent advice 193 .. atM.

Special instructions—

GENERAL INFORMATION AS TO PATIENT'S CONDITION—EXPLANATION OF OBJECTIVES AND CORRECTIVE MEASURES—(Verbal)

..... M.D.

(Copy to patient—Copy filed with Periodic Health Examination)

THE EXAMINING PHYSICIAN RECOMMENDS ON THIS FORM THE CORRECTIVE MEASURES
TO BE FOLLOWED AND RECORDS THE TIME FOR A SUBSEQUENT APPOINTMENT.

One or more of these activities should be perfectly safe for any student who is physically able to remain in college. Undoubtedly there are some students in every institution who are overtapping their strength by attempting to remain in school. Even in cases of this kind it is better to have them enrolled in restricted and reconstructive physical education where they may be observed, advised, and instructed regarding their physical limitations.

Metcalf⁴ has found archery to be the best all-round activity from the standpoint of safety and interest for the greatest number of students.* Archery includes activities which range from mere target shooting at short range with weak bows to the more vigorous activities of rovers, clout shooting, flight shooting, archery golf, and hunting with the bow.

Swimming is an excellent sport for physically handicapped students. In this activity may be found students who are blind, students afflicted with infantile paralysis, and students minus a leg or an arm

⁴ Metcalf, H. G. "The Individual Physical Education Program." *Proceedings, College Physical Education Association*, 1932, p. 110.

* Archery has become a popular intramural sport for college men and women.

or suffering from ankylosed joints, hernia, cardiac defects and the like.

Badminton, bait-casting, bowling, croquet, golf, hiking, and horse-shoes are individual activities which can be carried on as hobbies throughout life. Every student should be given the opportunity to compete in the less vigorous team games if physically able to do so. Such a program approximates as closely as possible the regular program. Restricted and reconstructive physical education, then, is not a hospitalized procedure. On the contrary it provides, if properly administered, an opportunity for educational experiences which are suited to the needs of individual students.

Administration.—The administration of the health examination of entering students was discussed in a previous chapter. All students rated C or below should be assigned to restricted and reconstructive physical education and referred to the staff member in charge. It is desirable, when possible, to form sections in order that team activities may be provided. Such sections, however, should be small and in many instances, temporary. Students who have been injured or who are convalescing from some disease may be assigned temporarily to these restricted groups and returned to the regular classes as soon as possible. Sections should meet two or three times per week for consultation, activity, and instruction. Sufficient interest should be aroused on the part of the student so that he or she will perform daily any prescribed or recommended individual exercises outside of the class period. The program, then, really consists of two parts, (a) a game and sports program and (b) a special set of exercises.

It is evident that the prescribed daily routine for a cardiac case differs greatly from that of a case of malnutrition. At Ohio State University questions considered in cardiac cases are:

1. Is the present academic routine too great a burden?
2. If the present load is too great what adjustments can be made to lighten the load?
3. How can the student be helped to discover physical limitations, and live comfortably within his energy income?
4. How can the student outgrow inferiority complex attitudes toward certain activities after parents have created such an attitude?
5. What are the chances of gradually strengthening the heart?
6. What activities of a sport character are safe and will help in making a happy recreational life?

"To help solve some of these problems the following is routine for the cardiacs at the time of their conference: an unhurried visit to get

acquainted; history to discover if possible the cause of the heart defect; reference to the card file to give the doctor's diagnosis and recommendations, if any; a stethoscopic examination; a functional examination (taking pulse rate before exercise, after exercise, and two minutes after exercise); an explanation to the student of sufficient fundamental heart physiology that he can grasp the facts of his case as nearly as they can be ascertained; a discourse on general principles of exercise and their influence on the heart.

"The student is then asked to take an 'Individual Physical Education Observation Card' home with him for the next month and check the following information on the card daily: hours of sleep, blocks walked, stairs climbed, work hours (for own support), study hours, recitation hours, sport recreation hours, social recreation hours, regular meals, menus, unusual symptoms, and emotional disturbances. . . ." ⁵ Finally, the student is asked to rate his feelings of general efficiency for that day on a basis of ten. He is instructed to take into consideration his feeling of health, fitness for work and play, success in studies, and general vitality. Over a period of several weeks the cards will probably reveal the reasons for low efficiency. Health conferences should be held frequently with a health service physician, and if possible, with orthopedic physicians.

At the University of Illinois ⁶ general requirements are prescribed for students in "individual gymnastics." Each individual is required to write a paper dealing with certain basic facts concerning his particular handicapping condition. Different topics are assigned for each semester. The paper must be 2,500 words in length. In addition to this assignment each student is required to formulate and execute satisfactorily one set of exercises designed for his individual condition.

At Barnard College ⁷ a modified program is provided for those students having postural, foot, menstrual, or other remediable physical defects. Individuals may be assigned to a remedial section for one or all hours. A special program for the correction of such defects is given in these classes. Students may substitute this program for regular classes when temporarily unfit for regular work. (See form on page 211). The *modified* program may be combined with a *regular* or a *restricted* program. The *restricted* program consists of walking and rest classes. The former is designed for students whose condition

⁵ Metcalf, H. G. "The Individual Physical Education Program." Op. cit., pp. 112-113.

⁶ Staley, S. C. and Staff. "The Curriculum in Physical Education for Men at the University of Illinois for 1931-1932." Mimeographed report.

⁷ Wayman, A. R. A Syllabus for Physical Education. Edwards Brothers, Inc., Ann Arbor, Michigan, 1931, pp. 17 and 18.

is such as to permit little or only mild activity. The latter is prescribed for individuals unable to take part in any activity and for whom rest seems more desirable temporarily or permanently. A *menstrual* program of such a nature is provided that the students may live a normal life in every way at that time. Such extremes as hot or cold water when bathing, strenuous activity, which involves the strain of competition, and inactivity are avoided. Exercises are taught in the remedial classes which are designed to relieve and cure discomfort where such is not caused by an organic condition. All students are expected to refrain from strenuous activity during the first two or three days of the period. If a student is feeling normal a remedial class is substituted at the time of the regular activity. In case of pain or extreme discomfort rest is substituted.

Grading.—Grades or marks in restricted and reconstructive physical education should be granted as nearly as possible on the same

BARNARD COLLEGE

DEPARTMENT OF PHYSICAL EDUCATION

You are temporarily substituting walking, resting or some outside activity for your regular work in physical education. In order to receive credit for this, you must hand in a report each week before 4 p. m. Friday. Slips are provided for this purpose outside office 209 Students Hall. Failure to comply with this ruling will give you a cut for each class missed. Please cooperate not only by handing in the slips, but by faithfully doing the substitute work assigned.

AGNES R. WAYMAN
Head of Department.

NOTICE TO STUDENTS WHO ARE TEMPORARILY SUBSTITUTING SOME OTHER ACTIVITY FOR
THE REGULAR PROGRAM OF PHYSICAL EDUCATION.

BROWN UNIVERSITY

DEPARTMENT OF PHYSICAL EDUCATION

IMPORTANT

Mr. has been absolutely
debarred from gymnasium work by the Medical Office from
to inclusive. He is registered in but
should not take part in any athletics, nor use gymnasium, swimming pool, nor
any of our equipment.

Please assist in seeing that he does not violate these instructions

THIS NOTICE, SIGNED BY THE COLLEGE PHYSICIAN, DEBARS THE STUDENT FROM ACTIVITY
IN THE GYMNASIUM FOR A STATED PERIOD.

ADMINISTRATION IN COLLEGES

basis as the regular program. Students with defects should be able to diagnose their own case and show achievement in skills or im-

THE OHIO STATE UNIVERSITY
INDIVIDUAL PHYSICAL EDUCATION RECORD

NAME						ADDRESS (LOCAL)									
COLLEGE						AGE									
DISABILITY						TEN.									
PERTINENT HISTORY						YEAR									
RECOMMENDATIONS OF PHYSICIAN						MO.									
TYPE		LITHE	(TALL	SHORT	MEDIUM)	LEG LENGTH (ANT SUP SPINE)					RIGHT		LEFT		
UNDERLINE		MEDIUM	(TALL	SHORT	MEDIUM)	HFS LENGTH (POST SPIRL)					RIGHT		LEFT		
		STOUT	(TALL	SHORT	MEDIUM)	WIPS									
DATE															
WEIGHT															
HEIGHT (STANDING)															
LENGTH (LYING)															
HEAD															
SCAPULAE															
CHEST															
SUBCOSTAL ANGLE															
KYPHOSIS															
LORDOSIS															
SCIOLIOSIS															
PROMOTION															
LONGITUUDINAL ARCH															
TRANSVERSE ARCH															
NAME						ADDRESS									

RECORD CARD FOR PHYSICALLY HANDICAPPED STUDENTS (Front).

[illegible]

RECORD CARD FOR PHYSICALLY HANDICAPPED STUDENTS (Reverse).

provement in correcting the defect or both. A written or oral examination and a demonstration of suitable exercises or activities might well be required.

The final examination at Illinois⁸ consists of three parts:

- a. A written examination dealing with the cause, correction, (or protection where correction is impossible), prevention, and maintenance of the corrected condition, and general health knowledge.
- b. A practical demonstration of any exercises prescribed by the student during the current semester.
- c. A practical demonstration of special prescribed activities (Required achievements).

The final grade is determined as follows:

25 per cent for industry, improvement, and progress.

25 per cent for a term paper.

25 per cent for required achievements.

25 per cent for the final examination.

Marks at Ohio State University are based upon:

Knowledge of the Defect	30
Knowledge of Prescribed Exercises	30
Proficiency in Sports	30
Attitude	10
<hr/>	
Final Grade	100

Record Cards for the Physically Handicapped.—The card on page 212 is an excellent example of a record for students in the restricted and reconstructive program. This form gives more complete information than is possible to record on the individual permanent record card illustrated on page 160.

Administrative Standards and Policies.—Certain administrative policies⁹ should guide in the administration of a restricted and reconstructive physical education program in colleges and universities.

The department of health and physical education should provide a program of restricted and reconstructive physical education for all students who are physically handicapped, whether permanently or temporarily.

Students classified by the health examination as unable to participate in the regular program should be required to take restricted and reconstructive physical education.

This phase of the program should not be a hospitalized procedure

⁸ Staley, S. C. and Staff. Op. cit., p. 3.

⁹ Hughes, W. L. The Administration of Health and Physical Education for Men in Colleges and Universities. Bureau of Publications, Teachers College, Columbia University, New York, 1932. Section V, pp. 76-78.

and only those students who cannot profit more by the regular program should be given restricted and reconstructive activities and exercises, which approximate as closely as possible the regular program, and which are compatible with the physical defect.

Individual corrections should be regarded as a clinical procedure for only the very worst cases of the physically defective.

The clinical procedure for individual corrections should be administered by especially trained teachers of orthopedics who carry on individualized instruction under the close supervision of a thoroughly qualified doctor of medicine.

The department should determine the individual needs of the physically handicapped students, bring about an intelligent understanding and appreciation of the defect by the student, and outline and provide a program of activities.

Students in restricted and reconstructive physical education should be classified within the group according to the nature of the defect.

Physically handicapped students should be given an opportunity to participate and acquire skills in team games and individual "carry over" sports, as far as this is possible without harm to the individual.

Occasionally it may be possible and desirable to permit certain physically handicapped students to participate with the regular classes.

Students with remediable defects should be expected to correct them at the earliest possible date.

Physically handicapped students should be able to diagnose their own case, demonstrate suitable exercises, and show achievement in skills or improvement in correcting the defect, or both.

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CHAPTER XI

MEASUREMENT IN COLLEGE PHYSICAL EDUCATION

The Skepticism of College Physical Educators.—In a preceding chapter it was stated that college physical education is concerned with the development of: organic systems, neuromuscular skills, wholesome habits and attitudes regarding physical activities, and desirable standards of conduct. If physical education is to be justified in colleges and universities we should know the extent to which individual students have progressed from month to month and from year to year. In physical education some things can be measured specifically, others only in a general way, and still others, unfortunately, cannot be measured at all. Due, largely, to the lack of adequate tests, workers in the college field have been slow to join in this movement to measure educational progress. Many have felt the coach's or instructor's judgment to be far superior to any tests yet devised. They have demanded too much of tests, expecting them to measure everything. Frequent criticisms have been that a majority of the tests do not measure specific skills or abilities. For that matter neither does the intelligence test. But with the increased scientific interest in tests and measurements during the last eight or ten years there is gradually being developed by research workers in our own field a group of general and specific tests. To the uninformed, these tests mean very little. The uninitiated do not know the various uses for tests, nor do they know what tests to use. This uncertainty has led to scepticism.

Uses of Tests and Measurement.—Some of the doubt concerning the use of tests may be dispelled by indicating certain uses for them in college physical education.

1. Determination of status; organic, skill, etc., for purposes of classification and as an indication of need.
2. Development of scores for comparisons.
3. Classification of men and women into homogeneous groups on the basis of general motor ability, or physical capacity.
4. Establishment of minimum achievement standards in physical education on the basis of general motor ability, on the basis

of specific skills or achievement in a variety of activities, or both.

5. Diagnostic testing to determine specific needs of individual students.
6. Prognostic testing to predict probable future success in particular activities.
7. Measurement of progress in developing organic vitality, in acquiring skills, play habits, and attitudes, and knowledge for purposes of (1) promotion, and (2) for grading and granting of credit.
8. Measurement of the relative value of various types of programs.
9. Determination of teacher efficiency by measuring pupil progress and comparing with some standard.

Measures of Health and Organic Vigor.—The *health examination* is, of course, the most valid measure of the health of students. Its reliability depends upon the examining physician, the time required, the number and type of measures made, and the equipment used. The chief value of the health examination is its diagnostic usefulness, particularly when supplemented by laboratory tests. On the other hand, many medical measures lack norms and as pointed out in a previous chapter the physician is likely to overemphasize the clinical rather than the educational aspects of health.

*Physical capacity or strength tests*¹ appear to be valid, reliable, and objective measures of organic vigor and physical condition and are useful supplements to the health examination.

Other measures, like "The Foster Test," "The Crampton Test," "The Barringer Test," "The Schneider Test," etc., lack validity, reliability, or both.

Physical and sensory tests for vision, hearing, feet, and posture are also useful measures of health.

General Physical and Motor Capacity Tests.—This term denotes original or native non-specific capacity or ability. It implies future *potentialities* rather than present achievement. These tests attempt to measure the general capacity or ability underlying the more specific motor abilities required in basketball, swimming, and golf.

There are a few tests of this general nature which are applicable on the college level.

Rogers' Physical Capacity Test,² although developed for boys, is

¹ a. Chamberlain, C. G. and Smiley, D. F. "Functional Health and the Physical Fitness Index." *Research Quarterly*, March, 1931, pp. 193-198.

b. Rogers, F. R. "The Significance of Strength Tests in Revealing Physical Condition." *The Research Quarterly*, Vol. 5, No. 3, October, 1934, p. 43.

² Rogers, F. R. *Physical Capacity Tests in the Administration of Physical Education*. Bureau of Publications, Teachers College, Columbia University, 1925.

also useful in classifying students, measuring progress, and motivating activities among college men. Messer³ reports a correlation of .92 between Rogers' Strength Index and the general athletic abilities of Williams College men as determined by objective tests. He also found that athletes at Williams attained Strength Indices not reached by 90 per cent of the student body. Rogers reports⁴ the use of these tests for men and women by Yavits of Ithaca College.

The Brace Motor Ability Test,⁵ was designed to measure native motor ability or capacity and is applicable in the college field. Unfortunately, the validity of the test was reduced by the fact that some of the stunts are taught in many school systems. Recently the test has been improved by eliminating original test items which correlated below .30 with motor ability and adding other tests to the original battery.

MacCurdy's Physical Capacity Index,⁶ although devised for measuring the physical capacity of secondary school boys may prove useful on the college level. The author believes the tests may be applied to all ages from the junior high school through the college. This does not seem an unjustifiable assumption since the data used were comparable to the data on which Rogers found that the application of the strength index could be extended to a wide range of both sexes. Apparently it is a more valid measure of general athletic ability than the strength index.

McCloy's Tests of General Motor Capacity include a battery of three tests for girls and women, and four tests for boys and men and "when properly combined, measure general motor capacity to such a degree of accuracy as to give correlations of .93 with a large battery of achievement tests."⁷ The battery includes

1. The Sargent Jump,⁸ which measures the extent to which one can project his body upward with a jump.
2. The Brace Motor Ability Test.⁹

³ Messer, G. N. "Critical Analysis of the Application of the Rogers' Physical Fitness Test to Williams College Students." Unpublished Thesis, New York University, 1932.

⁴ Rogers, F. R. *Fundamental Administrative Measures in Physical Education*. The Pleiades Company, Newton, Mass., 1932, pp. 240-241.

⁵ Brace, D. K. *Measuring Motor Ability*. A. S. Barnes and Company, New York, 1927.

⁶ MacCurdy, H. L. *A Test for Measuring the Physical Capacity of Secondary School Boys*. Bureau of Publications, Teachers College, Columbia University, 1933.

⁷ McCloy, C. H. "Tests and Measurements." *Journal of Health and Physical Education*, September, 1932. Pp. 9-10.

⁸ Sargent, D. A. "The Physical Test of a Man." *American Physical Education Review*, April, 1921.

⁹ Brace, D. K. *Op. cit.*

3. The Burpee Test.* This is a test of agility and big-muscle co-ordination in which the student bends forward and places the hands on the floor, thrusts legs backward in the front leaning rest position, returns to the first position, and rises to the position of attention as many times as possible in ten seconds. Results are counted in full movements and quarters of a movement.

4. The McCloy Classification Index.¹⁰ This is a test for boys with an index number obtained from the formula 20 (age in years) $+ 6$ (height in inches) $+ \text{weight in pounds}$. All ages of eighteen years or over are counted as seventeen years. It should be noted that this classification is valueless for college women.

For purposes of computing the General Motor Capacity Index McCloy suggests the following formulae:

Men: $.82$ (Sargent Jump, in centimeters) $+ .53$ (Brace Test) 2.26 (Burpee test) $+ .19$ (classification Index)— 182 .

McCloy's formulae are somewhat involved for practical purposes and the tester in college physical education must choose between this and some simpler though less accurate method.

General Motor Ability Tests.—These tests are designed to measure general motor ability *at the time tested* in contradistinction to measures of innate general motor capacity. At least four tests have been validated.

1. *Rogers' Strength Index.*¹¹ Although this test applies to both sexes and all ages it is a valid test of general athletic ability chiefly for boys and men. Since it depends largely on dynamometer tests it is quite objective, it is reliable, and norms are available for all combinations of sex, age, and weight.

2. *McCloy's Chinning and Dipping Formulae*¹² give "with relative accuracy the strength of the individual which correlates very highly with his total strength and is more significant than total strength as a predictor of athletic ability."

3. *Cozens General Athletic Ability Test for College Men.*¹³ This method of measuring general skill is accomplished by testing representative specific skills. The test events are scored on the T-Score¹⁴ and are adapted to senior high school boys and college men. For this

*The unpublished original test was modified and reported in part by McCloy. Op. cit.

¹⁰ McCloy, C. H. *The Measurement of Athletic Power*. A. S. Barnes and Company, N. Y. 1932.

¹¹ Rogers, F. R. Op. cit.

¹² McCloy, C. H. "A New Method of Scoring Chinning and Dipping." *The Research Quarterly*, Vol. 2, No. 4, December, 1931, pp. 132-143.

¹³ Cozens, F. W. *The Measurement of General Athletic Ability in College Men*. University of Oregon Press, Eugene, Oregon, 1929.

¹⁴ McCall, W. A. *How to Measure in Education*. The Macmillan Company, New York, 1922.

group the test is highly valid and reliable. On the other hand, it is somewhat expensive in time and apparatus, and complete tables of norms for age and weight are not yet available. Some of the events, particularly the 440-yard run, may be physiologically unwholesome for younger boys or for any individual who has not had a health examination.

4. *McCloy's Tests for Measuring Athletic Power.*¹⁵ The scoring tables are computed according to the horsepower developed. This test is applicable over any normal athletic age range, including the college level.

5. *Alden, Horton, and Caldwell Motor Ability Test for College Women.*¹⁶ This test, similar to the Cozen test, is designed primarily for classifying entering women students into homogeneous groups for physical activity. This is one of the best tests so far devised for college women and although the reliability appears unnecessarily low it seems to be the most valid, reliable, objective, and economical test available.

6. *Other Tests of General Ability:* A number of other tests of general ability have been devised and, although most of them lack validity or reliability or norms, they have proved useful nevertheless. Barnard, California, Columbia, Oregon, Ohio State and others have used tests of this type.

Sport Technique or Skill Tests.—In measuring specific skills the activity may be tested as a unit or it may be broken up into its component parts. Achievement tests are needed but only a few that are adequately validated are available at present. Brace,¹⁷ Edgren,¹⁸ and Young and Moser¹⁹ have made promising beginnings in testing ability in basketball. Rogers and Heath²⁰ have developed knowledge and skill tests in playground baseball and soccer. Cozens²¹ and McCloy²² have developed norms for achievement in track and field athletics for boys and men.

¹⁵ McCloy, C. H. *The Measurement of Athletic Power.* Op. cit.

¹⁶ Alden, F. D., Horton, M. O. and Caldwell, G. M. "A Motor Ability Test for University Women for the Classification of Entering Students into Homogeneous Units." *Research Quarterly*, Vol. 3, No. 1, March, 1932, p. 87.

¹⁷ Brace, D. K. "Testing Basketball Technique." *American Physical Education Review*, April, 1924.

¹⁸ Edgren, H. D. "An Experiment in the Testing of Ability and Progress in Basketball." *Research Quarterly*, March, 1932.

¹⁹ Young, Genevieve and Moser, Helen: "A Short Battery of Tests to Measure Playing Ability in Women's Basketball." *The Research Quarterly*, Vol. 5, No. 2, May, 1934.

²⁰ Rogers, Elizabeth G. and Heath, Marjorie L. "An Experiment in the Use and Knowledge of Skill Tests in Playground Baseball." *Research Quarterly*, December, 1931. "An Experiment in the Use and Knowledge of Skill Tests in Soccer." *Research Quarterly*, December, 1932.

²¹ Cozens, F. W. Op. cit.

²² McCloy, C. H. *The Measurement of Athletic Power.* Op. cit.

Many other tests have been reported in the literature whose validity and reliability are not known. Standardized tests are needed for college men and women in all the activities of a college program of physical education and could be readily developed by methods similar to those already used. In fact, the formulation of standardized achievements tests in various individual events on the college level is now in progress.

Tests of Attitudes and Conduct.—Scores on valid general capacity and ability tests may indicate play interests and habits. Moreover, since habits and interests are positively correlated, scores on these tests probably indicate rather accurately the students interest in physical activity.

There are scores of "character tests" which have been devised but they are of doubtful value to the college educator. Watson²³ reported over 150 such papers and tests. The Studies in Deceit by May and Hartshorne²⁴ are well known. McCloy²⁵ set up a tentative list of character objectives and based a rating scale on them. He reports, also, a scale for rating the behavior of pupils in physical education activities by O'Neel which has been tested for validity and reliability.

Administrative Procedure.—The measuring program for each student should begin the first week he or she is on the campus. Entrance health examinations and any general or specific ability tests should be given during freshman week.

Classification of college students should first be based on health status regardless of age, or academic rating. Groupings may be made not only on the basis of the results of the health examination, but also on the results of a general physical capacity or ability test. Moreover, students may be further sub-divided on the basis of skill in particular activities. The general and specific tests listed above all contain full information regarding the procedure in administering them. If students are classified as A, B, C on the health examination they may be grouped as a, b, c on the physical capacity or motor ability tests. One study²⁶ shows a relatively high correlation between the Physical Fitness Index and the medical ratings of physical fitness.

Students rated "C" should be assigned to restricted and corrective physical education for individual instruction.

The "B" group should be given instruction in prescribed activities or they should be required to elect activities within certain limits.

²³ Watson, G. B. "Character Tests of 1926." Vocational Guidance Magazine, Vol. 5, No. 7, April, 1927.

²⁴ May, M. A. and Hartshorne, H. "Studies in the Nature of Character." Character Education Inquiry, Teachers College, Columbia University.

²⁵ McCloy, C. H. Character Building Through Physical Education. Research Quarterly, October, 1930.

²⁶ Chamberlain, C. G. and Smiley, D. F. Op. cit.

The superior or "A" group should be permitted to elect for the one- or two-year requirement. Theoretically an "A" student should be excused entirely if by "A" is implied superiority in health status, motor skills, play habits and attitudes, and social behavior. Unfortunately, high rating in strength or motor ability does not guarantee proper play habits or desirable social behavior.

Needed Research and Future Testing.—The need for valid and reliable tests in physical education is great in spite of the growing interest in the testing movement. There is need for agreement on the desired outcomes for college students. There is need for valid tests of attitudes, habits, and conduct. Prognostic tests which will predict accurately the probable future success in particular activities, including rhythmic, aquatics, games, sports, etc., would be helpful. Health habit, attitude, and knowledge tests are also necessary.

Mention has already been made of the need for standardized achievement tests and achievement scales in some thirty or forty different activities.

While the construction and standardization of tests will probably be done by a relatively few technicians, use of the tests should be practiced by an appreciative and intelligent clientele if progress is to be made.

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CHAPTER XII

THE ADMINISTRATION OF INTERCOLLEGIATE ATHLETICS

The Beginnings of College Athletics.—Athletics as education is one note that runs through all recent literature on school and college athletics. At first opposed, despised, and rejected, later tolerated, often grudgingly, as a necessary evil, athletics have since been recognized and accepted as an important auxiliary and even as an integral part of the college educational program.

Barely two generations ago gifted athletes were looked upon with suspicion. If they were proud of their prowess they were despised. Brains and brawn were believed to exist in inverse ratio. Colleges were supposed to "train the mind." Asceticism held the body in contempt and play was sinful and a waste of time. The emotions were feared probably because they were frequently associated with sin. A philosophy that believed in a dual aspect of mind and body had no place for athletics. Athletics in education was unthinkable.

Gradually, however, college officials began to tolerate athletics as a necessary evil. Intramural games and sports grew spontaneously and rapidly among the students. Educators gave them an arctic greeting and a grudging welcome but little or no educational appreciation or administrative supervision. In a surprisingly short time, due to the innate love of sport and the growing intensity of athletic rivalry on the one hand, and to the conservatism and short-sightedness of college officials on the other, organized intercollegiate athletics grew rapidly. Young and inexperienced athletic managers made embarrassing mistakes. Bickerings and misunderstanding resulted. It was soon discovered that continuity and experience in management was needed. Athletics came into the colleges and universities with some exceptions, solely because they were running wild and the institution had to dominate or be dominated by them.

Intercollegiate Athletics as Physical Education.—Partly for the sake of protection and partly because certain educational values were vaguely felt, athletics have increasingly been accepted as educational. The more recent philosophy of education which recognizes the unity of mind and body demands that institutions of higher learning develop "the whole student." Colleges are now considered as socializing agencies where young people are helped to develop their own best

selves, physically, mentally, socially, and emotionally. We now believe that certain forms of development which may be obtained in no other way may come through big-muscle athletic activities. Intercollegiate athletics, then, represent the peak of the physical education pyramid.* This part of the program provides *instruction* and *competition* for men and women with a high degree of motor skill.

It is only within recent years that college women have attempted to organize and supervise their athletics. Athletics for women, like similar activities for men, grew up like "Topsy." There were no constructive policies and few leaders. Without desirable standards certain dangerous or doubtful practices appeared. Women leaders finally were aroused to the extent that they organized definite opposition in the form of the Women's Division of the National Amateur Athletic Federation. A platform of a negative type was first adopted, but within recent years it has been changed to more constructive policies and programs.

WOMEN'S DIVISION
NATIONAL AMATEUR ATHLETIC FEDERATION OF AMERICA
New York City

PLATFORM OF

The Women's Division, National Amateur Athletic Federation of America aims to

1. Promote such programs of athletic activities for all girls and women as shall meet their needs, and as shall stimulate interest in activities that are suited to all ages and capacities.
2. Promote competition that stresses enjoyment of sport and the development of good sportsmanship and character rather than those types that emphasize the making and breaking of records and the winning of championships for the enjoyment of spectators or for the athletic reputation or commercial advantage of institutions and organizations.
3. Promote interest in awards for athletic accomplishment that have little or no intrinsic value.
4. Promote educational publicity that places the emphasis upon sport and its values rather than upon the competitors.
5. Promote the use of suitable costumes for athletic activities.
6. Promote the provision of sanitary and adequate environment and facilities for athletic activities.
7. Promote the apportionment of adequate time allotment for a physical education program such as shall meet the needs of the various age groups for growth, development and the maintenance of physical fitness.
8. Promote the training and employment of women administrators, leaders and officials who are qualified to assume full responsibility for the physical education and recreation of girls and women.

* See Chapter IX, page 194.

9. Protect the health of girls and women through the promotion of medical examinations and medical "follow-up" as a basis for participation in athletic competition, and of a system of supervision that shall assure a reasonable and sane attitude toward participation in activities at time of temporary physical unfitness.
10. Protect athletic activities for girls and women from the dangers attendant upon competition that involves travel, and from their commercialization by interest in gate receipts.
11. Promote the general adoption of approved rules for the conduct of athletics and games for girls and women.
12. Promote the study of the existing rules of all sports to the end that they may be changed to meet the specific needs of girls and women.

Intercollegiate athletics have a very definite place in physical education and general education.¹ They represent the peak of the physical education pyramid as described in Chapter IX. They are a special phase of physical education just as Shakespeare's writings are a special phase of English Literature.

Aims and Objectives.—It can safely be stated that the primary justification for intercollegiate athletics in our colleges and universities is to assist proper organic development and to make desirable changes in the habits, skills, attitudes, and appreciations of students.

In professional athletics, and in some present day college athletics which are promoted as extra-curricular, justification for them was based on their earning capacity, their advertising value, or the entertainment afforded the spectators. But in the colleges today the emphasis is changing. Other objectives are being formulated. Increasingly, policies are being determined and problems solved, not from the standpoint of fame or finance, but from the standpoint of the welfare of individual students.

The aims and objectives of physical education were discussed in Chapter I. Since intercollegiate athletics are considered here as a phase or part of physical education the aims and objectives of the two are identical. Surely athletics, if they are to be justified, must do their part in helping students develop physically, mentally, socially, and emotionally. They must contribute to the development of: organic systems, sport skills, play habits and attitudes, and social learnings.

A long list of *administrative* objectives, in the form of standards and policies, are presented at the end of the chapter.

Intercollegiate Athletics for Women.—The case for and against intercollegiate athletics for women has been widely and definitely

¹ Williams, J. F. and Hughes, W. L. *Athletics in Education*, W. B. Saunders Company, 1930, p. 12.

stated by women leaders in the field. Lee² found, in 1930, that only 11 per cent of the 98 institutions reporting, promoted some form of intercollegiate competition. Fifty-three colleges and universities participated in one or more play days. She states that "the Play Day idea seems to have taken our colleges by storm but the suggestion coming from a few sources that this competition be organized as college vs. college is met with approval by only a minority."

The play day program, promoted by the Women's Division of the National Amateur Athletic Federation, has spread rapidly throughout the country in recent years. Teams are made up impromptu of girls from different institutions and while the standard of team play is somewhat reduced other valuable educational experiences in social situations are believed to be gained.

Until more facts are available it would seem wise to accept the statements of women leaders regarding intercollegiate athletics and play days for college girls. While it is evident that a majority disapprove of intercollegiate competition as it is conducted by men, a small minority do not support the view that all intercollegiate athletics, particularly in the form of *sport days*, should be abolished or prohibited. Certain suggestions regarding varsity contests and sport days seem rather naive to most men and to some women. This is a field in which predetermined opinion and tradition should be challenged. Serious thinkers should consistently seek to validate programs that offer the maximum values to college women.

In some institutions the program for women is represented only by a physical education trapezoid. The entire peak, *i.e.*, all intercollegiate competition has been eliminated. In others, the only inter-school competition consists of one play day each year. It would appear that such programs are not offering maximum values to the women undergraduates.

A combination of *sport* and *play* day, where girls play *with* and *against* their friends from neighboring institutions, should offer the advantages of both plans while minimizing the disadvantages. This type of intercollegiate athletic competition for women should be provided by all institutions. Several such events should be scheduled annually. There should be no undue alarm that this program will be an entering wedge for the old type of intercollegiate competition. Conditions are different today. There are innumerable highly trained women physical educators who are capable of administering such a

² Lee, Mabel. "The Case For and Against Intercollegiate Athletics For Women and the Situation Since 1923." *Research Quarterly*, Vol. 2, No. 2, May, 1931, p. 93.

program with credit to the institution and with profit to the women students.

At present, competition in play and sport days consists largely of contests in basketball, baseball, tennis, hockey, volleyball, swimming, archery, and soccer. Occasionally there has been competition in group games, dancing, track and field, riding, horseshoes, golf, ice hockey, deck tennis, darts, clogging, lacrosse, fieldball, fencing, and ping pong. Types of activities common in telegraphic intercollegiate meets are rifle shooting, archery, swimming, and track and field. It should be noted that this is one form of competition which some women leaders fear might stimulate the making and breaking of records. A few years ago the Eastern Society of Directors of Physical Education in Colleges for Women disapproved of telegraphic meets.

Organization for Sport and Field Days.—A number of committees should be appointed to assist the staff in making preliminary arrangements and in the conduct of the program. Committees on program, officials, entertainment, hospitality, lunch, transportation, registration, publicity, etc., have been found desirable. The play and sport day programs should be arranged in detail several weeks or months in advance.

Intercollegiate Athletics for Men.—The *educational* objectives have been discussed above and in Chapter I. A list of 175 *administrative* objectives involving decisions which every director of athletics is constantly having to make have been determined and evaluated elsewhere³ in the form of standards and policies.

Some of them, adapted from the original source, are presented here as guides to college athletic administrators.

Organization.—The organization of intercollegiate athletics as a part of the department of health and physical education is shown by diagram in Chapter II (Page 15). Final control should be vested in the president and board of trustees.

Committees.—It is becoming more and more generally agreed that a director should be placed in charge of all physical education with full power to conduct the affairs of the department. Due to the importance, other than educational, often given to intercollegiate athletics, it may be necessary to provide an *advisory* committee. A faculty committee on educational policy might well determine policies for the entire institution, including athletics. A director should then be empowered to carry out those policies relating to athletics. This would make an advisory committee or an incorporated board unnecessary.

³ Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1932. Section VII.

The eligibility committee has been eliminated in certain institutions and the Dean is the final authority. If scholastic standing is referred to the Dean and physical condition to the physician all other matters can be handled by an honest director.

The principle of the integration of sports with education implies the gradual elimination of eligibility rules. Arguments seem to be wanting as to why participants in athletics should be penalized in academic subjects. The languages, mathematics, or history should carry their own drive. If athletic activities are really believed to contribute to the education of young people would it not be just as logical to prevent the taking of Latin or History by an athlete who failed to measure up to a certain standards? The practice of requiring individuals to participate in activities in which they have no interest or aptitude in order that they may do the thing they desire to do, is not generally commendable.

Managers.—The combined varsity and intramural manager plan ⁴ is fully described in Chapter XIII. The selection of assistant and senior sport managers may be done by a committee composed of the director, coach, captain, and outgoing manager or some other group representing both the students and the department. Nordly ⁵ has devised a rating scale for the selection of athletic managers which is a decided improvement over the old method of subjective judgment. Managers, assistants, and novices should be assigned very specific duties in printed, typewritten, or mimeographed form. Candidates can then memorize their duties and perform them promptly and efficiently. Some member of the staff should be assigned the duty of supervising these sport managers.

A business manager of athletics may be needed in the large universities. If one is provided it seems logical that he be an assistant treasurer of the university and responsible to the treasurer of the institution and the director of physical education.

Athletic Associations.—Many college officials believe there is no longer a need for an athletic association. Originally they were designed to finance athletics. Student membership was dependent upon the payment of a fee or the purchase of a coupon book. Gradually many became non-functioning tools where offices were held nominally by students. They became undemocratic and aimless. The regular student government performed many if not all of its former functions. If such an organization is provided membership should be free and open to all students. Moreover, it should have definite functions in

⁴ Williams, J. F. and Hughes, W. L. Op. cit., p. 191.

⁵ Nordly, C. L. "A Rating Scale for the Selection of Athletic Managers." *Research Quarterly*, December, 1933.

assisting in such administrative duties as the organization and administration of a student manager system for managing home contests, the selection and training of cheer leaders, the development of training rules and point systems, the establishment and maintenance of wholesome athletic traditions, the inauguration of health and sportsmanship campaigns, and a host of other worthy enterprises.

Coaches.—Coaches should be nominated by the director, recommended by the president, and officially appointed by the trustees. This means they are appointed in the same manner as other members of the teaching staff. They should be granted the same faculty rating as a similar training would command in other departments. The minimum should be an undergraduate major in physical education in an institution of recognized standing. Coaches should be employed on a full time basis and should be expected to render capable service and assistance in other phases of physical education, *i.e.*, required classes, intramural athletics, or physical education major courses.

The coach who attends faculty meetings at all times except when such meetings conflict with actual coaching duties, will not only show a real desire to cooperate with the faculty in the education of the undergraduates, but he will be better prepared to render a more intelligent and sympathetic service himself.

Physician.—All athletic training should be under the direct supervision of a physician, preferably the director or other physician from the health service department of the institution.

Trainer.—The trainer, if one is provided, should know definitely just where his responsibility begins and ends. Under no circumstances should he be permitted to assume the responsibilities which require a thorough medical training. In the application of bandages and as a masseur the trainer has a definite place but the practice of providing a trainer, without also providing a trained physician and surgeon with full authority to supervise the prevention and care of all athletic injuries, is to be condemned.

Finances.—All athletic money, including gate receipts, should be handled as are other funds of the institution by one financial expert, the university or college treasurer. The funds may be centralized and pooled or they may be handled by the treasurer without communizing them with other funds. All bills should be paid by the treasurer on the order and approval of the director of athletics.

A Budget.—A budget, or complete financial plan based upon careful estimates of needs, expenditures, and probable income for a definite period should be provided. A sample budget is described in Chapter XVIII.

Purchase of Equipment.—The purchase of athletic equipment may

be done directly by the department or indirectly through the institution's purchasing agent. Theoretically, the latter plan is desirable as a centralization of this function makes for economy in the purchase of supplies for all departments. Practically, however, the former plan seems to serve best and is the more common method. The buying of athletic equipment requires highly technical knowledge and a large amount of time and money is involved. Directors of athletics and coaches have found it desirable to eliminate the red tape and do their own buying.

Quality, price, and service should be given consideration. Buying usually should be done early and in quantity. Before placing an order an inventory should be made of the stock on hand. New equipment should conform to specifications, should be official, and the price should be consistent with market conditions.

Regulation purchase order forms should be used in purchasing equipment whether ordered by the department or the purchasing agent. This practice will insure legality of contract and prompt delivery and payments. These forms (page 232) should be made out in triplicate so there is a copy for the department, the seller, and the purchasing agent or the treasurer who pays the bill. These copies should differ in color. If equipment is brought in quantity it is sometimes advisable to purchase through bids on blanks furnished by the institution. Emergency or local orders (page 233) should also be made on regular forms.

It is a rather common practice in the universities to provide two voucher forms on which the seller is expected to bill the department. Many college directors consider this too much "big business" and they accommodate the firms since a majority prefer to use their own forms.

Accounting of Funds.—The system of athletic accounting should provide an official set of accounts showing a complete and accurate record of income and expense. If the athletic funds are in the control of the treasurer it will be necessary for the department to keep an unofficial duplicate set which is more detailed than the treasurer's accounts. This plan has been used successfully, it requires very little time, and it provides an accurate basis for estimating the budgetary needs of the department.

The treasurer should provide the athletic director with a copy of the amount debited and credited to each account in his department each month.

Managers, ticket sellers, and other individuals handling athletic funds in large amounts should be bonded.

Ticket Sales.—Some person should be assigned the task of conducting ticket sales for athletic contests. It may be the director, a staff

member, or a full-time ticket sales manager. This individual should be bonded. Tickets should be purchased like other equipment and a

ATHLETIC ASSOCIATION
of the
University of Illinois
Men's New Gymnasium—Champaign, Illinois
PURCHASE ORDER

Date_____

Please furnish the Athletic Association with the following articles and bill us on the attached voucher forms:

QUANTITY	ARTICLE

The following directions must be followed exactly:

- I. Mark every package of goods plainly
STOREKEEPER,
University of Illinois Athletic Association,
Memorial Stadium,
Urbana, Illinois.

II. RENDER INVOICE IN DUPLICATE (white and golden rod copies) on attached Voucher Forms immediately after shipment of goods. Bills will not be audited for payment on any other form. Your regular billing form may be included if desired. If order is shipped in installments, additional Voucher Forms will be provided on request.

III. ALWAYS NOTE OUR PURCHASE ORDER NUMBER on all Voucher Forms, acknowledgment of order, Bill of Lading, Express Receipt, and other papers, and send to us with above voucher forms.

IV. ADDRESS ALL CORRESPONDENCE regarding this order to

Order No 4510

Ordered by_____

Form P-2M 4-30

U. of I. Athletic Association
Men's Gymnasium, Champaign, Ill.

PURCHASE ORDER BLANK. NOTE THE DIRECTIONS AT THE BOTTOM.

description and record in permanent form should be kept (page 234). Tickets are potential cash and should be accurately accounted for.

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Tickets should be receipted when received giving quantity, price, and suitable description. These receipts should be filed in the treasurer's office where they are available for auditors.

Form 8015-A

For Instructions
Refer to Our
Order No.....

THE OHIO STATE UNIVERSITY Purchasing Department

EMERGENCY ORDER

To
.....

Please furnish bearer with the following items and charge same to The Ohio State University.

.....
.....
.....
.....
.....

This order must be countersigned by
L. W. St. John or G. M. Trautman

Countersigned by
.....

R. M. ROYER
Purchasing Agent.

THIS FORM IS USED FOR EMERGENCY PURCHASE ORDERS.

Facilities and Equipment.—Facilities and equipment for all physical education are considered in subsequent chapters. A detailed discussion of fields, buildings, and courts for intercollegiate competition are presented elsewhere.⁶ Methods of constructing gridirons, tracks, baseball diamonds, and tennis courts are described in detail. It does not seem too idealistic to expect every college and university to provide at least sufficient facilities for intercollegiate competition in football, basketball, baseball, track, swimming, tennis, and golf.

Care of athletic buildings and grounds is commonly administered in one of two ways. This work may be delegated to the department of Buildings and Grounds with adequate provision for cooperation. Some directors believe that under this plan the athletic fields would never be cared for until the front campus was in first class condition. Which plan will work best in a given institution will depend largely upon the personnel of the departments concerned.

⁶ Williams, J. F. and Hughes, W. L. Op. cit. Chs. X and XII.

1. A physician, preferably from the health service department, should be responsible for the health supervision of athletes.
2. A thorough health and physical examination should be required of all athletes before any vigorous practice or intercollegiate competition is permitted. This examination should be repeated before each sport season.
3. The policy of the department regarding the responsibility for the reasonable care of athletic injuries should be made known to students. It is quite generally agreed that the institution is morally responsible. There is some evidence that there is also a legal responsibility.
4. A physician should be present at all intercollegiate football contests and easily available for all practices and other intercollegiate contests.
5. Athletes should report to the physician after strenuous practices or contests for examination for possible injuries.
6. An athlete with a head injury which causes loss of memory should be removed from the contest. If the trouble persists the student should be sent to the hospital or infirmary to remain for the night.
7. Athletes who have had operations for hernia, appendicitis, etc. should not be permitted to compete without the consent of the health service physician.
8. The physician in charge should have full power to decide whether an athlete is fit to play. The advisability of playing when infected with boils, skin diseases, or other serious infections should be left entirely to the medical officer.
9. Soiled towels, underclothes, supporters, and socks should be boiled when laundered.
10. Clean towels, underclothing, supporters, and socks should be provided athletes daily if needed.
11. Individual drinking cups or other sanitary methods of obtaining drinking water should be provided athletes at practices and intercollegiate contests.

Management of Contests.—The director of athletics might well consider the following policies regarding the management of intercollegiate contests.

1. For the most part, intercollegiate contests should be played with educational institutions and on the grounds of educational institutions. This is not always possible in all sports, as for example, in the case of a fencing match with an athletic club.
2. Contests should be scheduled only with institutions with simi-

lar standards of eligibility and training which provide equal or nearly equal competition.

3. Schedules should be made out by the director and the coach concerned and approved by the faculty.
4. Schedules should be limited to about 8 games in football, 15 in basketball and baseball, and about 8 meets in track and swimming.
5. The institution might well prohibit intensive preseason practice in all intercollegiate sports.
6. Post season contests should be avoided.
7. If intersectional games are played they might well be limited to one every student generation or one a year. Contests which involve extreme distances or require long absences from classes should be discouraged.
8. Practice periods, including theoretical discussions, should be limited to two hours daily.
9. The period of match play in the different seasonal sports should not exceed ten weeks, exclusive of vacations and examination periods.
10. A definite organization, personnel, and routine for managing home contests, according courtesy to visiting teams, officials, and spectators should be provided.
11. The details of team trips, transportation, eating and sleeping accommodations, should be cared for well in advance.
12. All expense money should be carefully accounted for (see page 237).
13. Absence from classes should be kept at a minimum.

Program of Sports.—The emphasis on certain sports should depend upon their educational value rather than their public appeal or tradition. Since it is impossible to measure the contribution which football, or tennis, or track makes to the education of college undergraduates it is important the major and minor sport distinction be discarded. Both team and individual sports should be included in the intercollegiate program. In so far as possible the varsity sports should be the same activities which are offered in the required and intramural programs. Unfortunately, this is often impossible in football and certain other activities which require expensive equipment, careful and prolonged conditioning, and expert coaching before they can safely be admitted to the required and intramural programs.

Participation.—Every student who is physically able and who has the desire should be given an opportunity to make a varsity squad. It is desirable to increase player participation. It would be ideal if all "normal" individuals could compete in intercollegiate games. The

present tendency to extend varsity competition to more individuals and to prevent undue overspecialization of a few is commendable.

EXPENSES OF ATHLETIC TRIPS ARE ACCOUNTED FOR ON THIS FORM.

Some directors believe guidance is a better method of limiting individual participation than rules which limit each individual in some of the sports and years in which he may compete. Freshmen com-

petition is prohibited in some colleges and universities while others operate a full schedule of games in all sports. A better plan than either of the above would permit the freshmen to compete in from one to four intercollegiate contests near the end of the season.

Awards.—The plan of awarding symbols of achievement rather than gifts of great monetary value has gained favor during the economic crisis. Increasingly, athletic departments are reducing the number of awards granted to any one individual. Moreover, there seems to be a decided tendency to grant the same official letter for all sports. When desirable to distinguish between sports a small letter or other symbol is placed on or inside the official letter. Regulations governing awards should be flexible enough to include all worthy cases. A director of athletics in a college believes that

“the day is past when we need to pay our athletes by giving them sweaters, watch fobs, B.V.D’s, and such other ornaments, visible and otherwise. I am well content to award a letter and a certificate. Certainly when a man graduates from college—the college does not reward him by giving him an overcoat with the college seal on the back of it.”

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CHAPTER XIII

THE ADMINISTRATION OF INTRAMURAL ATHLETICS

Intramural Athletics as Physical Education.—Many forces are at work to create a more wholesome balance between the required and intramural programs and between intramural and intercollegiate athletics. There are some individuals who advocate the abolition of intercollegiate sports and the expansion of intramural activities. Others who do not share this view still fear that it soon may come to pass. It is safe to state, however, that the great majority who have studied the problem, believe each phase of the program is important and that each will serve best if designed to supplement rather than replace the other.

Intramural athletics, then, represent the middle portion of the physical education pyramid.* This part of the program is designed to provide *competition* for those who lack sufficient skill to participate in the varsity sports. The sports promoted should parallel those offered in required classes so thorough instruction may be provided. While habits, skills, attitudes, and knowledge are being developed in the regular classes these extra-class activities may make possible further development and the achievement of greater dividends.

Although the programs for men and women are treated separately the policies underlying the organization and administration of intramural athletics for college men and women are essentially the same. Naturally some distinction must be made in the selection of activities but there is very little difference in the units used as a basis for grouping. The women seem to stress *inter-class* competition more than the men, but this is probably explained by the fact that they have little or no varsity contests. Both sexes make use of managers, officials, leagues, point systems, awards, etc.

Intramural Athletics for Men.—Due to the tremendous growth of intramural athletics since the World War the problems concerned with their administration have been numerous and perplexing. Inexperienced leadership, and lack of funds and facilities were but a few of the early handicaps to the optimum development of a program. Students did not seem to be particularly interested in competing or

* See Chapter IX, page 194.

perhaps they felt that any concerted attempt to do so would end in disappointment. Educators apparently were content if the students satisfied their needs vicariously as spectators at varsity contests. Moreover, tradition influenced greatly the selection of activities and the organization of a program. There was a tendency to copy both the desirable and undesirable features of the varsity program. An activity was incorporated in the program for no more reason than the fact that it was already being played by the varsity.

Today trained leadership is not the problem it was ten or twelve years ago. Although funds and facilities are seldom entirely adequate, it must be admitted they are more easily obtained than formerly. Tradition does not afford the influence it once did. In spite of advances made and difficulties overcome there still remain a multitude of problems which require study. Few, if any, institutions have exhausted the possibilities of service by means of this phase of the physical education program.

Perhaps, then, it will prove helpful to point out examples and offer certain suggestions concerning problems deserving consideration without attempting in any way to exhaust the list.

Organization and Administration.—How shall intramural athletics be organized and administered? Various forms of the organization of intramural athletics exist today. In some institutions this phase of the program is still promoted by the interscholastic or intercollegiate division, in others it has been developed by the division of required physical education, and in still others it has grown up independently. The ideal situation seems to be that diagrammed and discussed in an earlier chapter¹ in which intramural activities constitute one division of physical education along with the division of extramural athletics and the division of required physical education. The form on page 242 illustrates a similar plan.

The Director.—Who shall direct the program? A small minority believes there should be no single person in charge of this program. They argue that there is altogether too little interest in intramural athletics now on the part of coaches and other instructors. This group would have every coach or other staff member responsible for one or more sports in the intramural program. For example, the varsity basketball coach would promote intramural basketball. He would train managers, coaches, and officials and otherwise assist in supervising the sport.

Apparently the great majority favor the plan of providing an intramural director. This, however, does not solve the problem. Too often the other staff members will leave this phase of the program entirely

¹ Chapter II. See page 15.

to such a director.* The ideal plan would appear to be a combination of the two proposed above. There should be a director to coordinate and unify and to attend to the many routine details. But in addition, all coaches and other instructors should be employed with the understanding that they are not only to coach or teach their varsity specialty but that they are to be responsible for the supervision, coaching, and officiating of one or more sports in the intramural program.

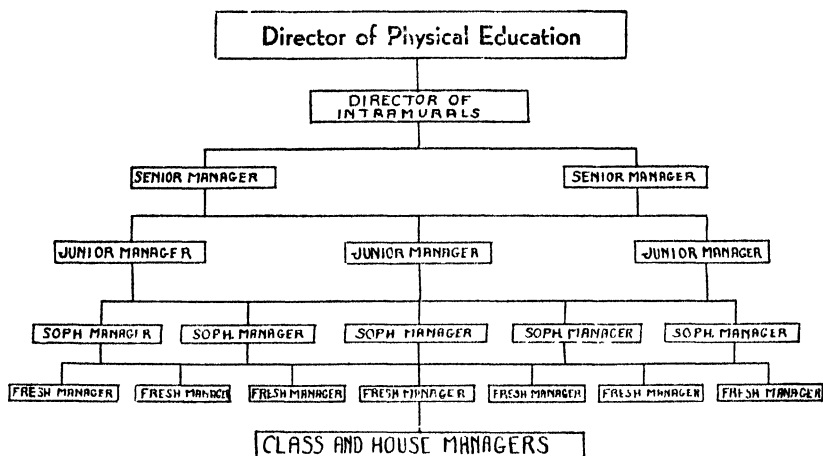


DIAGRAM SHOWING THE ORGANIZATION OF INTRAMURAL ATHLETICS AT OBERLIN COLLEGE.

The plan probably is not feasible unless all phases of physical education are combined in a single department with one directing head. This is another argument for a unified department. One man in charge of all divisions can assign one staff member the responsibility of directing the division. Moreover, he can insist that all staff members assist with some part of the program. The several instructors and coaches would bring variety, enthusiasm, and informed leadership, while the director would coordinate and unify. Coaches may assist in promoting intramural athletics by the teaching of game techniques to team managers and coaches, the training of officials, and the officiating of important games as well as in numerous other ways.

The day undoubtedly is not far distant when a great majority of institutions will appoint staff members to assist in all phases of the physical education program, varsity, intramural, required, and in the teacher training divisions in institutions training teachers. When that

* On the other hand, Nordly, in a study of intramural athletics in selected universities, did not find a single intramural director whose duties were confined solely to intramural athletics.

day comes we will no longer see the varsity coach or assistant varsity coach with little or nothing to do, other than attend a coaches' meeting, until three o'clock in the afternoon while required classes and intramural games are being supervised by undergraduates. The coach or other staff member, who has responsibilities in all phases of the program, should be a better coach and teacher because of his broader experiences. Furthermore, the plan is imperative in the interest of economy and efficiency.

Student Participation in Control.—What part shall the students play in the administration of intramural athletics? At present student participation in control is represented in various ways but particularly in the form of *unit** managers on the intramural council or committee, the seasonal or sport managers, and the officials.

Intramural Council or Committee (Unit Managers).—A number of types of councils or committees with varying power exist at present. A very desirable plan is a democratic one in which each unit or group has a representative on the committee. This individual is usually the unit (gymnasium class, fraternity, rooming house, class, etc.) manager. The council or committee has as many members as there are intramural units in the school or college. Every student has a voice in shaping the policies of the division through his representative. In very large high schools or universities where the number of competing units is large, thereby making the membership unwieldy for administrative purposes, an executive board may well be provided to carry out the wishes of the larger committee. This plan of organization does not imply *complete student control* but it does represent an excellent example of *student participation in control*.

The intramural committee should determine with the director the policies and rules of the division. With a minimum of guidance college and university students will use excellent judgment in selecting activities, determining competing units and methods of organizing competition, and in establishing desirable rules and regulations.

Intramural Managers.—What form of manager plan is most desirable? In most institutions, at present, the intramural and varsity sport managers are entirely separate. This seems illogical and unfortunate. The intramural division usually needs an increased personnel to successfully promote all activities. The most feasible plan has been to ape the varsity manager system. But where the two divisions, intramural and varsity, are separate the desirable managerships are likely to be found with the varsity. Prestige is sometimes lacking in intramural managerships, and the failure to combine

* Unit refers to fraternity, rooming house, or other organization represented by one or more teams in the various intramural activities.

divisions in one department has frequently worked to the disadvantage of intramural athletics.

Would not a combined plan, in which all varsity and intramural managers worked under the supervision of a staff member, be superior to the separate system? A determined attempt could be made to equalize, as nearly as possible, the duties and the prestige of all managers, varsity and intramural. This, undoubtedly, is possible to a far greater extent than has yet been accomplished in many institutions. The awards and other forms of recognition given intramural managers should be similar to that afforded varsity managers. These positions should be made to mean something on the campus and in time prestige can be built up.

Another managership problem not yet solved is the number of managers needed in a given situation. The plan of selecting one senior manager in charge of intramural athletics for an entire year does not appear to be the best plan for all situations. This is true for at least two very good reasons. In the first place, this plan will ordinarily require too much time of one individual. But the second and more important reason is the fact that only one individual benefits by the opportunity to develop the qualities of leadership needed to hold this office.

The ideal plan would seem to be one in which as many students as possible are provided an opportunity to participate in the conduct of the games, while at the same time sufficient duties, responsibilities, and prestige are attached to the position to create a desire on the part of the students to attain it.

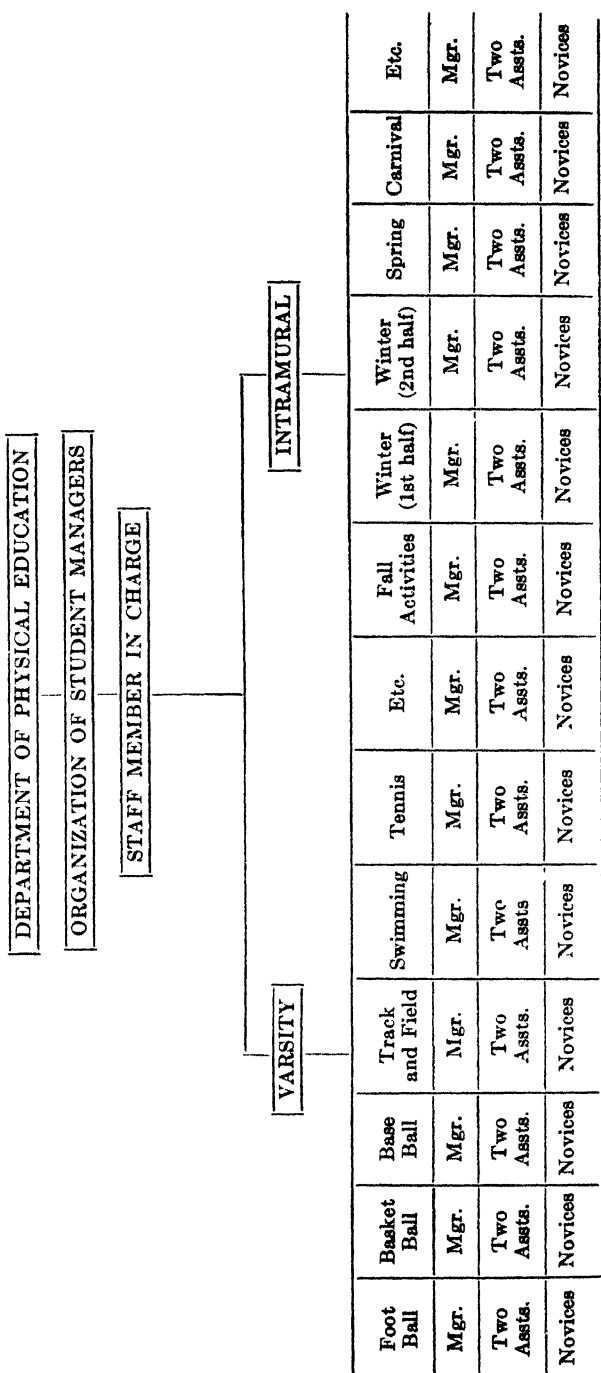
The plan of providing one manager, two assistant managers, and several novices for each session or each sport will give opportunity for leadership to a great many more individuals. The plan² is illustrated on page 245.

Nordly³ has developed an excellent plan for selecting athletic managers by a Rating Scale. The items for the scale were selected and defined after a study of duties of managers. These items were submitted to twenty men of experience for evaluation after which they were weighted and ranked according to importance. Three individuals, properly instructed, should rate each manager after observing his work throughout the season. Although the validity of this scale has not been established obviously it is a distinct improvement over former methods.

Officials.—What is the best plan of selecting and training officials

² Williams, J. F. and Hughes, W. L. Op. cit., p. 190-192.

³ Nordly, C. L. "A Rating Scale For the Selection of Athletic Managers," Research Quarterly, December, 1933.



THIS PLAN OF ORGANIZATION PROVIDES OPPORTUNITY FOR LEADERSHIP TO A LARGE NUMBER OF STUDENTS.

for intramural games? Certainly the present methods are not entirely satisfactory. Objective tests on rules are desirable, but something more is needed. The opportunity to observe competent officiating and actual practice under supervision are highly desirable if games are to be handled efficiently. Poor officiating may be a source of frequent protests, ill feeling, and general lowering of morale among participants. This problem tends to emphasize the need for the whole-hearted cooperation of coaches and other staff members. Each can do his part either in his own sport or in some other activity not promoted on the varsity basis.

It is a prodigious task for the director of intramural athletics to train a sufficient number of officials. He is entitled to the help of every member of the required physical education and athletic staff. Tests, clinics where competent officiating is observed and rules are interpreted, and actual practice in practice games or required classes will do much toward solving the officiating problem.

Aims and Objectives.—What are the objectives of intramural athletics? Do they differ from the objectives of physical education or of education? It is important in this connection to indicate whether *educational* or *administrative* objectives are being considered.

The *educational* objectives may be thought of as those values which participants are supposed to derive from participation. Since intramural athletics are one phase of physical education the educational objectives for the part should be the same as the objectives for the whole. There is no need for a separate statement of educational objectives for intramural athletics. They have been stated for physical education (Chapter I). The intramural phase of the program should contribute to the development of organic systems, leisure time skills, play attitudes and desirable standards of conduct.

The *administrative* objectives may be thought of as those things provided in the form of personnel, funds, facilities, etc., so the educational objectives may be attained by the participants. They differ widely from those set up for intercollegiate athletics, or required physical education, or health service, and they will vary in different institutions.

A list of *administrative* objectives in the form of standards and policies have been formulated and evaluated so they may be used as guides to directors of intramural athletics.⁴ A list of these standards and policies adapted from the original source are presented in the summary.

⁴ Hughes, W. L. The Administration of Health and Physical Education for Men in Colleges and Universities. Bureau of Publications, Teachers College, Columbia University, New York, 1932, Section VI, pp. 91-106.

Program of Activities.—What sports shall be promoted by the division of intramural athletics? Shall we select those in which the varsity competes, those which the neighboring institutions have chosen, or are there other bases for selecting an intramural activity? The fact that tradition or a preceding director has influenced the choice of activities may be a very poor reason for promoting certain games and sports. Unquestionably, some individuals have given little thought to the reasons for including or rejecting an activity.

Criteria for Selecting Activities.—Certain criteria for selecting activities were presented in Chapter IX. Every director of intramural athletics should be familiar with the study of the Committee on Curriculum Research of the College Physical Education Association.⁵ This committee evaluated physical education activities on the basis of their relative contributions to the five great needs in child development:

1. Physical or organic needs.
2. Social or citizenship needs.
3. Psychological or mental needs.
4. Safety skills.
5. Recreational skills.

Certain administrative considerations must be kept in mind also, in choosing a suitable program.

1. Does the activity require elaborate equipment?
2. Is the sport easily learned and played?
3. Is the game suited to a large number of participants?
4. Does the activity require a large amount of playing space?
5. Et cetera.

Anyone who has had experience in administering intramural athletics has been compelled to consider the second list. The first list, however, unquestionably has been frequently overlooked.

What games and sports fulfill the first criterion? What activities are physically wholesome for girls and boys, or college men and women? Football, although ranking third among the activities evaluated by the Committee, would probably fail to meet the first criterion in most institutions. Why? Because football is not physically wholesome unless three provisions are made, namely, adequate protection, proper conditioning, and intelligent coaching. If these are not provided football is likely to hinder rather than enhance organic development. Cross country, rowing, lacrosse, ice hockey, track, boxing, wrestling, and others fall into the same category. A larger list could be made for girls and women, and younger boys.

⁵ LaPorte, W. R. and Others. "Report of the Committee on Curriculum Research." Proceedings, College Physical Education Association, 1929-34.

All this means that either protection, conditioning, and coaching should be provided or the above activities should not be a part of the intramural program.

The first criterion means that to be physically wholesome activities should be *vigorous* but not *strenuous*. Therefore, in order to satisfy the first criterion all "normal" individuals should participate in the more vigorous activities. Horseshoes, archery, basketball foul shooting, and similar sports are not vigorous enough in themselves, although they are valuable in supplementing activities of a more vigorous nature.

In order to fulfill the first criterion every student should be given a thorough health examination before any participation is permitted. If the proper unity and cooperation exists the health service division will examine all students, including intramural participants.

The following activities might well comprise a nucleus around which to build a program of intramural athletics for college men.

A. *Fall.*

- I. Team Games. Speedball, touch football, soccer, and field hockey.
- II. Individual Sports. Golf, tennis, horseshoes, and archery.
- III. Doubtful (unless protection, conditioning and coaching are provided). Football, and lacrosse.

B. *Winter.*

- I. Team Games. Basketball, and volleyball.
- II. Individual Sports. Handball, squash, bowling, badminton, swimming, ping pong, deck tennis, foul-shooting, carnivals, etc.
- III. Doubtful (unless protection, conditioning, and coaching are provided). Ice hockey, boxing, wrestling, and indoor track.

C. *Spring.*

- I. Team Games. Softball, and baseball.
- II. Individual Sports. Golf, tennis, archery, horseshoes, etc.
- III. Doubtful (unless adequate conditioning of participants is provided). Track and field.

The director should weigh each activity in his program against the criteria listed above or some similar bases and discard those which fail to measure up to the proper standards.

The Restricted Intramural Program.—How shall this program be organized? What activities should be selected? These and other problems in this connection require study. The students assigned to a restricted program probably have greater need for the benefits to be

derived from team play and competition than the normal individuals. Archery, horseshoes, croquet, and ping pong are examples of suitable games, but this phase of the program needs development.

Units of Competition.—Are present units satisfactory? How classify so 100 per cent participation may result? There is little uniformity in the methods of grouping students. The class is too large and is not satisfactory as a unit. Gymnasium classes are not permanent enough. College fraternities and sororities do not reach the unorganized college men and women or even all the students in these organizations since they are usually too large to be entirely satisfactory as a unit.

Columbia University
in the City of New York
Department of Physical Education



INFORMATION

Name _____ Date _____
(Print)

Address _____ Telephone _____

Activity _____

Organization	(Check One)		(Check One)
Class	<input type="checkbox"/>		
Fraternity	<input type="checkbox"/>	Individual	<input type="checkbox"/>
Dormitory	<input type="checkbox"/>	or	
Pro. School	<input type="checkbox"/>	Team	<input type="checkbox"/>
Independent	<input type="checkbox"/>		

Manager _____ Captain _____
(If Elected) (If Elected)

THIS FORM IS TO BE FILLED OUT COMPLETELY AT TIME OF FILING ENTRY.

As the programs continue to grow and to become more efficient the old units will need to be supplemented or replaced by better methods of classifying students. Classification by tests has been attempted in a number of public schools but it has rarely if ever been attempted in the colleges. Units should be small in size, relatively equal in playing ability, if they are to compete against each other, and of sufficient permanence to insure group spirit and the necessary interest. Tests would provide small units of relatively equal playing ability but the lack of permanency and group spirit probably more than offsets this advantage.

Methods of Organizing Competition.—Are round-robin-league championships, elimination tournaments, Olympic meets, or a combination of these, the most desirable method of organizing competition?

GROUP PARTICIPATION

Participation records for campus organizations are computed according to the following schedule:

	1*	2†	3‡
Athletic squads	10§		
Baseball	50	10	3
Basket-ball	50	10	3
Bowling	50	10	3
Boxing	35¶	6	3
Cross-country	30||	6	3
Diamond ball	50	10	3
Fencing	15	3	1
Golf doubles	25	5	2
Golf singles	15	3	1
Gymnastics	35	6	3
Handball doubles	25	5	2
Handball singles	15	3	1
Hockey	50	10	3
Horseshoe pitching—doubles	25	5	2
Horseshoe pitching—singles	15	3	1
Relays (to be determined before meets)			
Rifle shooting	20		
Sigma Delta Psi (1 point each event)	20		
Skiing (to be determined before meets)			
Squash racquets	15	3	1
Swimming	30**	6	3
Tennis doubles	25	5	2
Tennis singles	15	3	1
Touchball	50	10	3
Track	50††	10	3
Volley-ball	50	10	3
Wrestling	35¶	6	3
Winter carnival	30		

* Points for entering a team and playing through the schedule.

† Points for division championship. Half this number will be given to the runners up.

‡ Points for each game won in the elimination series.

§ Ten points will be awarded every campus organization for each representative on the Varsity, Class B, or Freshman Squads who has been in regular attendance throughout the season.

¶ Full team consists of a representative in each of the 8 events. If a full team is not entered, 4 points will be given for each weight entered.

|| Participation points granted to individuals and teams training under direction of the cross country coach 3 times a week for 6 weeks.

** A full team consists of a 4-man relay team, 3-man medley relay team, and 2 representatives in 5 of the other 6 events. Where a full team is not entered, 8 points will be given for the relay, 6 for the medley relay, and 3 for each of the other events in which the organization is represented by 2 men.

†† For indoor track a full team consists of a relay team and an entry in 10 of the other events. If a full team is not entered, 4 points will be given for each event and 8 points for the relay.

For outdoor track a full team consists of a 4-man relay team and an entry in 12 of the 15 events. Where a full team is not entered, 8 points will be given for the relay and 3 for each of other events entered.

Much can be done to improve programs in this respect. From the standpoint of the individual player the round-robin-league plan is usually the best form of competition. An elimination tournament is of very little, if any, value to the teams eliminated early in the competition. Olympic meet contests may be actually harmful. The practice of promoting an intramural track meet without previous training and conditioning is difficult to justify. It seems clear, that in so far as possible, intramural team games and individual sports should be promoted on the round-robin-league basis. Tennis may be promoted on the team basis. Four singles competitors and two doubles teams might comprise the team for the unit. On this basis the tennis team might be defeated in one contest and come back and win in the next. Golf, handball, and swimming may be promoted in the same manner. The plan is desirable because it offers opportunity for more persons to compete. Elimination tournaments are useful only as a last resort. If facilities were lacking to conduct baseball on a league basis it would be desirable to promote it on an elimination basis rather than deprive the men students of any chance to play the great national game. The practice of conducting the activities on the league basis simplifies somewhat the manner of awarding points toward an all-year trophy.

Point System.—Apparently most directors of intramural athletics feel justified in adopting some kind of point system but there is little uniformity in the method of awarding points.

It appears at present that points are awarded chiefly for being on a winning team, or for winning a tournament, or for membership on a "runner up" team, etc. Winning is important, of course, but it would seem desirable to place more emphasis on entering, competing, and finishing, and to reduce correspondingly the number of points awarded league or tournament winners. If there were ten teams in a league all might well be given fifty points for entering, competing, and finishing, and ten additional points for winning, nine additional points for finishing second, eight additional points for third place, and so on down the list. The point system at DePauw is an example.

POINT SYSTEM DEPAUW UNIVERSITY

In the major sports each team earns 50 points for participation and additional points depending upon final standing in the league. Each team loses ten points for each game that is forfeited in the major sports.

In the minor sports each team earns 25 points for participation and additional points depending upon final standing in the tournament. Each team that forfeits a match in the first round in minor sports loses twenty-five points; ten points are lost on all forfeits made after a team has played in the

first round. In the track meet an organization must have representative men competing in at least six events in order to earn the 25 points for participation. In all sports composed of competitive teams a full line-up must start the game for groups to win the participation points.

Points in Major Sports		Points for Play-off in Major Sports	
1st place	50 plus 10 = 60	1st place	60 plus 5 = 65
2nd place	50 plus 5 = 55	2nd place	60 plus 3 = 63
3rd place	50 plus 3 = 53	3rd place	60 plus 0 = 60
4th place	50 plus 2 = 52		
5th place	50 plus 1 = 51		
6th place	50 plus 0 = 50		

Points in Minor Sports		These are points awarded providing there are no forfeits. No points are awarded winners in the individual sports; each winner is given individual medal.	
1st place	25 plus 10 = 35		
2nd place	25 plus 5 = 30		
3rd place	25 plus 3 = 28		
All others	25		

In addition to the change in awarding points there is a marked tendency to emphasize group awards and point systems and to de-emphasize somewhat the individual points and awards. This, too, appears to be a step in the right direction.

Rules.—A program of intramural athletics may function smoothly with very few rules. Some of the rules of former years have already been eliminated. Others are of doubtful value. A rule requiring scholastic eligibility seems unfortunate. If a student is permitted to remain in the institution should he not be permitted and even encouraged to participate in sports and games regardless of his standing in Latin? The student is entitled to the benefits of athletic competition whether his classroom marks are poor or excellent. Other so-called subject matter fields should be expected to carry their own appeal. It is as absurd to deprive a student of intramural competition because he is down in mathematics as it would be to allow no one to register for mathematics who failed to participate in intramural activities.

The rule which specifies the number of sports in which an individual may compete seems superfluous. Not many individuals overdo and for those who do the problem is one of *guidance*. Proper supervision and guidance will probably do far more than any rule.

The rule which bars from all activities any individual who has professionalized himself in one sport seems unfair. We believe now that skill in sports is quite specific. A professional baseball player may be the rankest kind of novice in basketball or tennis.

Other examples of the need for study of our rules and regulations governing intramural sports could be cited but the need has been shown.

The following are the intramural rules at DePauw University:

INTRAMURAL RULES

DEPAUW UNIVERSITY

1. Any person, in order to represent a group in an intramural contest, must be a bona fide student of the University. Post graduate students or students working on advanced degrees above an A.B., or its equivalent, are not eligible for intramural competition. Faculty members are eligible for intramurals in the sports designated by the association.

2. In order to represent an organization a student must be a pledged or an initiated member of his organization.

3. Varsity squad men are not eligible for intramural competition in that particular sport. Men who have been dropped from varsity or freshman squads because of ineligibility or for any reason other than the fact that they are not of varsity caliber, are ineligible for competition in that branch of intramural sports. The varsity squad is defined as those men who are retained by the coach after the final cut in the squad has been made. Members of the freshman squad are ineligible for participation in intramurals after the final cut for that particular sport has been made.

4. Men who have won a letter at DePauw or any other college or university are not eligible for competition in intramurals in that sport. Reserve letters, if given, shall be regarded as varsity letters. The winning of a numeral shall not make a man ineligible in other sports in which letters have not been won.

5. A man may represent only one organization in a given sport. In other words, he cannot transfer from one organization to another organization in the same sport. His first participation with an organization definitely attaches him to that group for the remainder of the season.

6. Any team that fails to be ready to play within five minutes after the time scheduled for the game to start will forfeit to the opponent. If both teams scheduled to play fail to appear—both shall be credited with a forfeit and the same shall not be re-scheduled. In order to obtain a game by forfeit the full line-up must be present and ready to play.

7. Professional athletes are ineligible only in the sport in which they have competed as professionals.

8. All protests must be made in writing and handed in to the office of the intramural director within twenty-four hours after the completion of the contest in question. All such complaints will be ruled upon by the executive committee, composed of the officers of the intramural association and the director of intramurals. Complaints involving judgment of officials will not be considered just cause for a protest. Only in exceptional cases will protests be given any consideration at all.

9. Any man excused from required physical education, due to physical defects, shall not be eligible for participation in any intramural sport.

10. All men of freshman and varsity football at the close of the season, with the exception of seniors and others excused by the head football coach,

shall be ineligible for playground-ball in the spring intramural season while spring football is being conducted. This rule does not apply to freshman squad members who were not awarded numerals.

11. Any group playing an ineligible man shall forfeit the contest or contests in which the individual participated while ineligible. The score of all such forfeited contests shall be 2—0.

12. Any changes in intramural schedules, when possible, will be announced by the director of intramurals one day before contest is to be played. There shall be no postponements without the sanction of the director of intramurals.

THE RICE INSTITUTE
DEPARTMENT OF PHYSICAL EDUCATION

INTRAMURAL

Article I—Eligibility Rules

Section 1. All students of The Rice Institute shall be eligible to enter any activity promoted by the Department of Physical Education, except as provided later in these articles.

Section 2. A student who has received the varsity award ("R") in any sport shall not be eligible to compete in that particular sport. Candidates for varsity or freshman teams may be declared ineligible for intramural competition at the discretion of the coach of the sport.

Section 3. A student barred from varsity athletics because of professionalism shall be barred from those branches of intramural athletics in which he has broken amateur regulations.

Section 4. Lettermen from schools which have athletic competition equivalent to the Southwest Conference shall be barred from intramural competition in the sports in which they have won letters. Eligibility in individual sports shall be determined after consultation with the varsity coach of the particular sport concerned.

Section 5. After entering one contest with a given team, a player may not transfer to another team in that sport.

Section 6. A team shall forfeit any contest in which it uses an ineligible player and the ineligible man is ineligible for further competition in that sport for the season.

Section 7. Any player using an assumed name shall be barred from all intramural sports during the season in which the offense was committed.

Section 8. All intramural teams must have a manager or spokesman who is the official representative of the team.

Section 9. The manager must present the physical education department with an official list of the members of the team at the time of signing for a tournament or before the time of the drawings.

Section 10. No additional entries will be recognized after drawings have been made.

Section 11. Notices will be posted giving publicity of events, four days before date of drawings.

Section 12. Managers and participants must observe the bulletin board for schedules of games.

Article II—Protests

Section 1. All protests must be made in writing to the department of physical education within twenty-four hours after the contest in question.

Section 2. Protests other than eligibility must be made on the field of play.

Article III—Forfeits

Section 1. If a team or contestant fails to appear at the appointed place within ten minutes after the scheduled time for a contest, the official may, at his own discretion, declare the contest forfeited to team or contestant ready to play.

Article IV—Postponements

Section 1. Only by mutual agreement of both teams and proper notification to the department of physical education may a game be postponed to be scheduled and played at a later date.

Article V—Physical Education Credit

Section 1. A man taking physical training for credit may substitute a game for his regular attendance, providing

- a. He is eligible to play the ensuing contest.
- b. He reports his attendance to the clerk in the office for recording.
- c. The game occurs on the same day as the regular class meeting.

Section 2. Playing in an intramural game will count as attendance for an excused absence in physical training provided the attendance is reported to the clerk in the office previous to the game.

Article VI—Awards

Section 1. There will be no awards other than certificates of membership on championship teams.

Intramural Records.—It has been said that statistics can be made to prove anything. Obviously, past methods of compiling data to be used in comparing intramural athletics in different institutions have been unsound and unfair. A uniform method of determining the extent of participation should be used. Most certainly this should not be done by the number competing in the various sports. Probably the best method is to determine *student-hour participation*. This information might furnish a basis for some valuable studies although the need for extensive records has been greatly exaggerated.

Finances.—What does it cost to promote intramural athletics? Cost studies are greatly needed in this new and developing field, but such studies are difficult where equipment and facilities are used

jointly by various divisions of the department. Here again the method of determining costs should probably be on the basis of *student-hour participation* in intramural athletics as compared with the student-hour participation in the use of the same equipment and facilities in varsity athletics and required physical education.

There can be no question but that intramural athletics should be financed by the institution from tax money, endowment, or student fees, where possible. But many schools and colleges are far from realizing this administrative objective. Too few of the taxpayers, and even the educational administrators, favor this program to the extent of paying for it. Until this problem is solved all others seem trivial. When sufficient funds are provided the other difficulties should soon disappear.

The Faculty and Intramural Athletics.—What is being done and what should be done regarding faculty recreation and intramural competition? A brief study⁶ has been made in certain colleges and universities to determine what is now being done for the faculty. Apparently very little has been done but the interest is growing. Certainly this phase of the program needs developing. Aside from the direct benefits to the faculty members themselves from such participation, unquestionably, the department and physical education everywhere would profit by the contacts made, the enthusiasm engendered, and the mutual understanding developed. DePauw University provides a complete uniform, lock, and locker free of charge to faculty members. The gymnasium, including the pool, is reserved one night each week for their exclusive use. Faculty teams are organized in softball, handball, volleyball, and other activities.

Intramural Athletics for Women.—Ainsworth states the order and location in which competitive games and sports first appeared in certain colleges for women. "From available information riding at Elmira in 1859 was the first sport mentioned. After this came boating at Vassar and Wells in 1879, swimming at Goucher in 1889, basketball at Smith in 1892, golf at Wells in 1894, fencing at Smith and track at Vassar in 1895, hockey at Goucher in 1898, lacrosse at Wellesley in 1901, volleyball at Smith in 1907, water polo and cricket at Bryn Mawr in the same year, natural dancing at Barnard in 1913, soccer at Bryn Mawr in 1919, and clogging at Barnard in 1920."⁷

Physical education for college women has grown out of its "wand-and-dumb-bell infancy." The emphasis now is on the development of

⁶ Pittser, C. M. "A Study of Faculty Recreation." Unpublished Thesis. Teachers College, Columbia University, 1932.

⁷ Ainsworth, Dorothy S. *The History of Physical Education in Colleges For Women*. A. S. Barnes and Company, 1930, p. 29.

health habits, improvement of physical condition and motor skills, and the establishment of a permanent interest in recreational sports.

Owen⁸ found that intramural competition prevailed in 21 women's colleges of the East and dominated the program even in the institutions which permit some varsity contests. The greater part of the time, equipment, and staff is given over to mass participation.

Organization and Administration.—Wagner⁹ found intramural athletics for women and the Women's Athletic Association were in some way related in all but two of 47 colleges and universities in the mid-west, far west, and south. At that time, the two were entirely separate at Michigan State College while at the University of Chicago all activities were a part of the regular departmental work. In most institutions the intramural activities are sponsored by the Women's Athletic Association. This is also true in the east at Adelphi, Hunter, Smith, Wellesley, North Carolina College for Women, and others.¹⁰

The Women's Athletic Association performs much the same function for the women's departments as the director and intramural council serve in the departments for men.

Managers.—Sponsorship of intramural sports for women by the Women's Athletic Association usually means the organization either elects the managers of all the intramural sports, or that one or more girls are appointed or elected to take charge of all intramural activities. Exceptions to this procedure occur in some institutions, notably at Michigan, where there is an entirely separate Intramural Board whose chairman is a member of the W.A.A. Board.

Sponsors.—In some institutions each physical education faculty member sponsors one sport, and in certain colleges the faculty coach all teams. This is difficult to administer but an attempt is often made to provide coaching in at least one practice session. In addition, major students, managers, or team captains do some of the coaching. The policy of providing as much instruction as possible is commendable. The intramural activities promoted should parallel in so far as possible those activities offered in the required program so that regular instruction may be given.

Officials.—Officials may be recruited from faculty and major students. Officials should be trained in sports technique and officiating. One plan provides major students, or other girls specially trained, in the regular league games or up to the semifinals, and faculty offi-

⁸ Owen, Janet. "Sports in Women's Colleges." New York Herald Tribune, Inc., 1932.

⁹ Wagner, Mariam. "Intramurals and the Women's Athletic Association." Research Quarterly, Vol. 2, No. 1, March, 1931, p. 206.

¹⁰ Owen, Janet. Op. cit.

cials for the more important final games. In training girl officials for more responsible tasks it is desirable to pair them with faculty officials or well-trained major students until they can assume full responsibility.

At Nebraska the intramural organization and the athletic association combined and organized The Women's Athletic Association with an active membership including every undergraduate and graduate woman of the university who was interested in athletics. There are no membership dues or other obligations. The plan of organization follows:¹¹

"I. Officers.

1. President
2. Vice-President
3. Secretary
4. Treasurer

II. Executive Council

A. Members

1. President of the Association, Chairman
2. Other officers of the Association
3. Concession manager
4. Publicity manager
5. Social chairman
6. Expansion director
7. Any officer of the A.C.A.C.W.
8. Ex-officio members:
 - a. Director of the Department of Physical Education for Women.
 - b. Faculty Sponsors of W.A.A.

B. Duties (briefly)

1. Meets once a week and has power of final decisions on all administrative matters.

III. Sports Board

A. Members

1. Heads of Sports appointed by the executive council

B. Duties

1. Notify all group intramural representatives of group practices and games
2. See that all necessary equipment is on hand for all match games

¹¹ Wagner, Marian. Op. cit., p. 201-211.

3. Cooperate with the advisor in:

- a. Securing officials
- b. Advertising her sport practices and match games."

"No individual points are kept and the present basis of awarding individual honors is as follows:

IV. Basis of awarding "N" *

1. Interest in the association and its program
2. Scholarship, that is eighty per cent for all years in the university and a clear record now standing
3. Character
4. Two and one-half years in college or university
5. Shall have attended the University of Nebraska for at least one year
6. A committee of all "N" girls and one faculty sponsor, shall investigate the eligibility of the candidate and make a report to the executive council which will make the final decision.

V. Basis of awarding the Numeral

1. Interest in the association and its program
2. Scholarship (same as for the "N")
3. Character
4. One year in college or university
5. At least one semester at the University of Nebraska.

* "Note—The individual award has gradually ceased to be a problem for discussion. So far this year no mention has been made of possible candidates, and we believe, as we had hoped would happen, it is gradually being forgotten, even by our majors who were most opposed to abolishing it. We are about to believe the individual award is a thing of the past."

"It should be added that group awards at Nebraska are carefully kept and an award is given to the group winning the tournament in each sport. In addition a final award is given to the group having entered the greatest number of sports, and having the largest per cent of girls active in sports throughout the year."

Program of Activities.—Wagner¹² found team and individual sports to be almost equally popular with basketball leading the list and swimming, hockey, baseball, track, rifle-marksmanship, and archery, golf-putting, etc. following in rank order. Owen,¹³ too, found

¹² Wagner, Marian. Op. cit., p. 208.

¹³ Owen, Janet. Op. cit., p. 4.

basketball, swimming, field hockey and tennis maintaining their old place together as the most generally familiar and the most generally popular among Eastern college girls.

Lacrosse, fencing, archery, golf, volleyball, games of low organization, rhythmic dancing, and tap dancing are seven types of activities which seem definitely in their ascendancy in popularity while baseball, track and field, and folk dancing apparently are on the wane. Among the more unusual sports in women's colleges of the east are crew at Cornell, Mount Holyoke, Smith, and Wellesley; rudimentary polo and cricket at Radcliffe; cross-country riding at Connecticut College, and jumping at the Jersey College for Women.

Swimming and tennis are the two most preferred sports at Barnard College.

Competitive Units.—The problem of providing satisfactory competitive units for intramural games seems as perplexing for women as it is for men. Two methods are common: inter-class and inter-group. The former plan, although used exclusively by some institutions and in combination with the inter-group in many other departments, is not entirely satisfactory because the class, as a unit, is too large. Five or ten girls on a basketball team representing a class of several hundred freshmen does not offer sufficient opportunity for large numbers to compete. This is one important objection to intercollegiate athletics for women. The inter-group units, such as sororities, dormitories, rooming houses, etc. are more desirable but as the program grows present units will need to be supplemented or replaced by more refined methods of classifying, so that groups may be small in size, and relatively equal in playing ability.

Organizing Competition.—It appears that much can be done to improve methods of organizing intramural athletic programs for women. The elimination tournament, a common form of competition, is of little or no value to the members of the teams eliminated early in the competition. The emphasis is largely on winning the tournament rather than on continued competition. From the standpoint of individual participants the round-robin-league plan is preferable.

Financing Intramural Athletics for Women.—It is clear that a regular budget should be provided to finance this phase of the physical education program. There should be no dependence upon gate receipts from intercollegiate contests or from entry fees. The salaries of the director of intramural athletics for women or staff members assisting with the program should be paid from the institution's regular budget for instruction. Available facilities should be set aside for women's intramural program at definite hours. The necessary equipment

should be provided by the department and charged against the budget for current expenses.

Although the above policy is desirable it is not always possible. In that event the necessary funds must be obtained from entrance fees, student activity fees, and gate receipts.

In conclusion it should be stated that if the men and women directors of this important phase of physical education are to get 100 per cent participation and at the same time properly safeguard the health of all the participants they must have the wholehearted cooperation of every physician, coach, instructor, or other health or physical educator in any way connected with the institution.

Administrative Standards and Policies.—By way of summary important standards and policies in the administration of intramural athletics ^{14, 15} are listed below. It is not claimed that all those proposed are applicable in every institution but they may be used by the intramural director as guides or as a check list to stimulate thought regarding planned and intelligent improvement in his program.

Organization and Staff.—

1. Intramural athletics are a part of physical education and should be organized and controlled by that department.
2. There should be a "Director of Intramural Athletics" for men and one for women.
3. Larger institutions will need an Assistant director.
4. Field supervisors who are responsible for the efficient handling of games will be found useful in the conduct of the program.
5. Coaches of intercollegiate teams should be expected to assist in the promotion of their particular sport or sports in the intramural program.
6. There should be an intramural council or committee made up of unit (fraternity, boarding house, etc.) and sport managers. This council or committee should assist the director and staff in determining policies and regulations regarding eligibility, protests, program of activities, units of competition, awards, etc.
7. The director of intramural athletics should act as a court of higher appeals on disputed questions which the student intramural council cannot decide.
8. An executive committee, or the director and the senior sport managers, may well determine policies and program in the larger

¹⁴ Hughes, W. L. *The Administration of Health and Physical Education For Men in Colleges and Universities.* Section 6, pp. 91-106.

¹⁵ Mitchell, E. D. *Intramural Athletics.* A. S. Barnes and Co., New York, 1925.

universities where a council of unit managers would be too unwieldy.

9. The unit managers should represent their organization and act as the intermediaries between the office and their respective teams.
10. The student managerial organization should be a part of a manager system for all athletics, intramural and intercollegiate.
11. The sport or seasonal managers should be appointed on a graded managerial plan wherein the successful students serve as novices the first season, assistants the second season, and managers the third season.
12. Intramural officials should be trained and examined by the department. They might well be required to pass knowledge tests on the rules and demonstrate ability in actual officiating.

Units for Competition.—

13. Units for intramural competition should be small in size, permanent in nature, and as nearly equal as possible in playing strength.

Facilities and Equipment.—

14. Special facilities should be provided indoors and outdoors or arrangements should be made whereby present facilities are assigned to intramural athletics at certain hours of the day.
15. Playing equipment, that is, balls, bats, etc. should be provided by the department. Personal equipment should be handled as explained in the chapter above on "Equipment."
16. All intramural participants should be urged to wear the regular physical education costume. (See the "Post Office Basket Plan," Ch. XIV.)

Program of Activities.—

17. All students who participate in intramural athletics should be required to pass a thorough health examination.
18. Team games and individual sports should be included in the intramural program.
19. Activities should be the type that are easily learned, and easily equipped. They should be suited to mass participation and the available facilities. Activities should be physically wholesome, that is, vigorous (but not too strenuous), yet safe for the novice. Furthermore, activities should be interesting to students.
20. Instruction in the skills, rules, and tactics of intramural athletics should be offered in the required classes in physical education.

Methods of Organizing Competition.—

21. The percentage or round-robin method of organizing competition is recommended if time and facilities permit. The elimination or tournament method and the Olympic meet plan do not permit the continued participation of large numbers of students.

Schedules.—

22. Schedules should be made well in advance.
23. The original number of contestants in an elimination should equal a perfect power of two. If the entry number is not a perfect power of two, only enough games should be played in the first round to reduce the entries to a perfect power of two for the second round.¹⁶
24. The total number of games needed in a round-robin schedule in which all competitors meet each other is determined by the following formula: $\frac{N(N-1)}{2}$ where N represents the number of entries.¹⁷
25. Playing leagues composed of about six or eight teams, depending some on the sport and equipment, are recommended. First, second, third, etc., teams (Class A, B, C, etc.) are desirable where the unit is large enough to recruit a number of teams.

Point Systems and Scoring Plans.—

26. Group all-year scoring plans keep the interest alive and prevent overconcentration in a few sports.
27. Point systems should place major emphasis upon the participation of large numbers throughout the entire year and only minor emphasis on a championship or the standing in a league.
28. Any student should be eligible for intramural competition if he passes the health examination, has sufficient scholarship to remain in the institution, and has not professionalized himself in the sport in which he desires to compete. Professional, varsity, reserve, and freshmen athletes should be barred from intramural competition only in their specialty.
29. There should be no transfer from one team to another during a sport season.
30. The amount of intramural competition is a matter of guidance rather than one of legislation.

Protests and Forfeitures.—

31. The department should definitely discourage protests. They may

¹⁶ Mitchell, E. D. Op. cit., p. 83.

¹⁷ Ibid.

- be reduced, or entirely eliminated, if a field supervisor, manager, or director is available to settle the dispute during the contest.
32. If protests are made they should be based on mistakes in rules rather than mistakes in judgment, and they should be submitted in writing within 24 hours after the contest.

Awards.—

33. Intramural awards should be symbols of achievement rather than a prize of great monetary value and the kinds and number should be limited. Soliciting prizes from business men is not generally commendable.

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CHAPTER XIV

THE ADMINISTRATION OF PHYSICAL EDUCATION EQUIPMENT

Increasing Importance.—The enormous growth of physical education in the colleges since the World War has made the administration of equipment * a matter of first importance. Under the old plan where each student was asked to furnish his own uniform, towel, and soap, the department assumed no responsibility except the difficult one of attempting to require occasional laundering of the equipment. If we are to believe the athletes of former years they appeared in uniforms of many different types and colors. In those days teams were greatly handicapped by contagious diseases and dangerous infections which were probably due, in part, to the equipment furnished by the players themselves. This condition was not confined to athletics alone. It existed, to some extent at least, in required physical education classes. In not a few colleges and universities soiled uniforms were packed into small baskets or lockers and allowed to sour and mildew. Offensive odors pervaded the atmosphere of the locker rooms. Despite warnings and threats, and the confiscation of objectional clothing, students did not maintain sanitary uniforms. Bad habits of personal cleanliness were established. Absurd superstitions existed regarding the relationship between a dirty sweatshirt, or other insanitary personal equipment, and the success in physical education activities. Desultory attempts were made to standardize style and color of uniform. However, in many institutions students continued to report for classes in all kinds and colors of clothing.

In recent years directors of physical education have begun to study, standardize, and properly care for physical education equipment. The results of a program of physical education are dependent partly upon the facilities and equipment provided. Proper organic development and desirable health habits and attitudes cannot result unless some attention is given to the equipment worn by participants in physical education activities. It is evident that some health hazards can be removed. Moreover, it has been found that by buying standard equip-

* The word EQUIPMENT is used here to mean uniforms, balls, bats and other movable and less permanent materials in contrast to the word FACILITIES which designates more permanent buildings, fields, pools, and courts.

ment in large quantities physical education fees can be reduced and a great saving to students may be made by preventing, or at least greatly reducing, the tremendous loss of towels, uniforms, and personal clothing. Gradually the policy of requiring college students to purchase their own equipment at some local store has been changed. In an increasing number of institutions a plan has been instituted whereby the department buys standard equipment in quantity, and supplies it to students at minimum cost.

Purchase of Equipment.—The director of physical education “should make a study of equipment and prices and should be able to recognize values, always with two considerations in mind: the improvement of the service to the students, and the most economical use of funds.”¹ The director should ask for bids stating specifically the kind, amount, and quality of articles. It is desirable to have each article of equipment bid on separately if it is of twenty-five dollars valuation or more. Samples should accompany all bids. Every purchase should be made on regulation forms and in such manner as will insure legality of contract, prompt delivery and payments, and careful management. Quality, as well as price and service, is an important consideration in buying. Quality goods last longer and look better but they cannot be bought “for a song.” Unless the buyer is a competent judge of woollens, textiles, and leather goods he should buy guaranteed articles from reputable concerns. Before placing the order an invoice should be taken of the stock on hand. Orders for new equipment should be made out in writing, since it is most un-business-like to order verbally unless such order is later confirmed in writing. Verbal orders are often not recorded, and in case of disputes over purchased goods no records are available to show just what was ordered. A purchase order is the conventional means used to purchase goods. It may be filled out by the directors of the department or by the institution’s purchasing agent. Purchase order blanks* are uniform in size (8½ x 11), they can be systematically filed, the order number can be checked with the invoice number, and reports can be made of complete records of purchases at the end of the year. Moreover, this contract form specifies the amount to be delivered, the means of delivery, an assured price, and the conditions of payment.

In buying equipment the director of physical education should keep clearly in mind the fact that the purchase of quality equipment is a sound investment only if proper measures are taken to insure the life of such materials. Today, the director who permits students to

¹ Williams, J. F. and Hughes, W. L. *Athletics in Education*. W. B. Saunders Company, Philadelphia, 1930, p. 169.

* Chapter XII, page 232.

purchase their own uniforms, or who purchases good equipment and then fails to properly clean, repair, and store it, is not serving the students in the most economical way.

Physical Education Costumes or Uniforms.—It is desirable for the physical education department to furnish a regulation standard costume at minimum cost to students and require all members of the activity classes to wear them.

For Men.—For men the costume might well consist of sweat shirt, jersey, pants, supporter, socks, and rubber soled shoes. Track drawers should be provided for outdoor activity in cold weather. All articles should be issued by the department, with the exception, perhaps, of the shoes. This equipment must be of the best if it is to wear well under hard usage and frequent laundering. Shirts and pants should be provided in at least three sizes,—small, medium, and large. Medium size supporters, and size 11½ socks will be satisfactory for the majority of the men. A few exceptions usually occur and a limited stock of extra large sizes will be needed. Trunks should be cut full in the seat. The pants leg should be cut short to insure freedom of movement and a draw string in the waist will eliminate troublesome buckles or buttons which are frequently lost or damaged by the laundry.

For Women.—The physical education costume for women has gone through tremendous changes, especially during the last half century.² In recent years women's costumes have freed them from the bonds of a ridiculous convention. Miss Amelia Jenks Bloomer of New York startled the world with her Camilia outfit in 1851. It consisted of a dress to the knees, below which were trousers cut full and gathered at the ankles. This was the start from the conventional full skirt and the beginning of the conventional *bloomer*. In the sixties the fair sex were permitted to remove *stays* and corsets during activity periods. In the seventies and eighties the blouse and bloomers of excessive width and length were used but apparently this costume was not common until after 1900. By 1910 the middie and bloomer was quite universal, but it had taken approximately sixty years to change from the ridiculous to the practical. Undoubtedly lawn tennis and the bicycle had much to do with bringing about the short skirt, divided skirt, and finally the bloomer.

The change in women's physical education costume did not stop, however, with the advent of bloomers. After the World War the knicker appeared, first the golf knicker with the strap below the knee, and later the cut-off gymnasium knicker with an elastic run in the hem. The middie, invariably worn outside the bloomer, was soon re-

² Aldrich, C. B. "The Evolution of Gymnasium Clothing for Women." *Journal of Health and Physical Education*, Vol. 1, No. 8, October, 1930, p. 16.

placed by waists with sport collars and teddy bottom. While the change to bloomers had taken sixty years the turn to knickers had required only five years.

But the evolution in physical education costumes for women was not yet complete for within the last few years has come about the most rapid and radical change of all. During the years of middies and bloomers, girls wore uniforms of various styles, colors, and materials. Some costumes were full, others were scant. Some were cotton or serge, others were sateen or other material. Suddenly the colored wash suit appeared. Lee reported "an apparent tremendous swing that is in progress at this very moment from the two-piece woolen suit to the one piece wash garment."³ The same study reveals the fact that the typical one-piece costume for women "is a romper style of light green cotton material. It fastens under the arm and on one shoulder and is self belted. It is sleeveless and has a 'V' neck. The bloomer comes either half way to the knee or entirely to the knee. It costs around \$2.60. The stockings worn with this costume are white cotton ankle socks."⁴ The most popular garment used as a requirement for out-of-door wear is the sweatshirt, although a sweater or the optional use of some other garment is permitted in some institutions. The *typical* shoe in use at present is the white canvas shoe of ankle height with rubber soles and spring heels.

Dancing costumes fall into three distinct types, the costume for natural dancing, the rhythms costume, and the practice costume. The first named is made of various materials but, according to Lee, A.B.C. silk, silk jersey, and crepe de chine predominate. Swimming suits for women are also becoming more standardized. Quoting Lee further she states:⁵ "The most used swimming suit is the grey cotton one-piece suit with the short skirt, round neck, and high armholes. However, the skirtless suit is used by many organizations. A very few schools use colors other than grey. In a few cases of 'varsity' swimming, woolen suits are required. . . . A few groups report that life savers use white caps and all others must use colored caps."

Small⁶ shows trends in material, color, and styles and sets up standards to which these should conform. Cotton is the most widely used material because it is inexpensive, it launders easily, its colors can be made fast, its shrinkage has been reduced, it is durable, and

³ Lee, Mabel. "A Survey of Athletic and Gymnastic Costumes Used by American Girls and Women." *Research Quarterly*, Vol. 3, No. 1, March, 1932, p. 15.

⁴ *Ibid.*, p. 18.

⁵ *Ibid.*, p. 44.

⁶ Small, Clare. "Standards in Physical Education Costumes for Girls and Women." *The Research Quarterly*, Vol. 5, No. 3, October, 1934.

it promotes less bacterial growth than any material except linen. Blue and green are the most popular colors and the one-piece suit is widely used in senior high schools and colleges. Ankle socks are now universally used while the footwear in most common use is the shoe of ankle height with canvas top and rubber soles.

It is interesting to note that at last the American college girl is permitted to dress modestly yet with sufficient freedom for full active participation in a variety of physical education activities. The present costume is not only conservative as to style and price, but it is more comfortable and sanitary.

Locker and Basket System.—There is much truth in the statement that the successful operation of a program of physical education in a college or university depends largely upon the convenience of facilities and the comfort provided in the dressing rooms. The latter problem may be solved by establishing a modern locker and basket system. The plan of a few years ago was to provide a locker for each student enrolled in required classes. The student was required to furnish uniform, towel, padlock, and key. As has been stated previously, uniforms became wholly unfit for wear. They served as sources of infection following slight skin abrasions. Moreover, locker room odors became offensive. To eradicate these conditions new methods of handling physical education costumes have developed.

The California Plan.—Kleeberger⁷ reports that a rental system for the administration of gymnasium equipment was inaugurated at the University of California about 1914. Two standard uniforms costing about five dollars were required of each student in the prescribed work. The students were then called upon to turn their suits over to the department with the understanding that they were to be laundered and distributed each week from a central checking room without cost to the students. At the end of the year the suits were stored by the department and available for the students returning the following fall. During the summer a four dollar fee (later increased to five) was instituted to cover the purchase, upkeep, and laundry of physical education uniforms for the period of four years. The regulation costume adopted consists of a sleeveless cotton shirt, cotton shorts, a specially designed cotton rubberless supporter, and a pair of cotton half socks.

The University of Oregon Plan.—In 1924 Scott⁸ installed a basket system at the University of Oregon designed to solve the locker room problem at that institution. The locker room was housed in a half-

⁷ Kleeberger, Frank. "A Rental System for Administration of Athletic Clothing." *The Journal of Health and Physical Education*, Vol. 1, No. 8, October, 1930.

⁸ Scott, H. A. "The Solution of the Locker Room Problem at the University of Oregon." *American Physical Education Review*, December, 1928, p. 670.

basement with a 50 by 40 foot space available for lockers. Students paid a two dollar fee per term and furnished their own uniforms. The situation created a health problem as well as a pressing need for more adequate locker room facilities. The plan devised operated as follows:

1. Every student in the University was required to pay a physical education laboratory fee of three dollars per term or nine dollars per year.

2. Upon entrance to the University every student paid a fee of eight dollars which entitled him to a complete uniform, except shoes, for a period of four years.

3. The department provided laundry service and change of clothing as frequently as was necessary.

4. The tote basket plan replaced the old locker system.

5. Four hundred fifty lockers and two thousand wire baskets 15 x 10 x 8 were provided. Four hundred fifty lockers were sufficient to care for the peak load.

6. Each basket was provided with a number and a name plate on which appeared the typewritten name and signature of the holder.

7. Lockers were not assigned. The student received from the attendant his basket containing uniform, towel, lock, and key and used any available locker. One full-time man operated the basket room assisted by part-time student help. Three men were needed at rush hours.

8. No wet or soiled clothing was ever permitted to remain in the baskets. Uniforms were placed in order with articles to be changed on top.

9. Baskets were passed out at one window and returned at another. Lost articles were noted on a "complaint list."

10. Missing articles not replaced within two days were charged to the student. Bills payable at the University business office were rendered and credit was withheld by the registrar until all bills were paid.

11. Refunds were made to students who were compelled to withdraw for any reason.

12. No attempt was made to provide each student with the same uniform at all times. Standard articles of the correct size replaced soiled pieces. Students were not permitted to borrow from other baskets.

13. A checking service was provided so that students might obtain towel, tennis racquets, handball, golf clubs and other athletic equipment.

14. Members of the faculty were provided costumes under the same plan.

Advantages accruing from this plan were: great reduction in skin infections; elimination of locker room odors; weekly disinfection of lockers; elimination of borrowing, which in itself greatly reduced the loss of towels, articles of clothing, and the chances for the spread of communicable skin infections; an increase in voluntary participation in physical education activities; more desirable habits of personal cleanliness; and more adequate storage space at greatly reduced cost to the students.

The University of Southern California Plan.—A slightly different plan is in effect at the University of Southern California. Laporte reports that an original combined basket storage and locker system is used. In planning the buildings, a very careful study was made of the many existing systems and all were found unsatisfactory because they were insanitary in many respects and it was not possible to supervise the equipment and the exchanging of uniforms and towels. He states further that "The counter service system with the baskets has proved unsatisfactory because it required continuous attendant service and resulted in considerable standing in line while waiting for baskets. The writer attempted to design a system which would combine all the advantages of a self service and counter service. He finally devised an arrangement with basket racks in double rows, with alternate inside and outside aisles, arranged about a central office area and counter in such manner that the attendant could walk up and down the inside aisles, exchange equipment, and maintain supervision of the entire locker room area while attending the counter. The arrangement permits the clerk to handle a situation in which there are some 300 dressing lockers and some 2500 baskets.

"It is possible for the student to secure their baskets on the outside aisles whenever desired. At each outside corner where the racks are joined is inset a double-decked locker which can be used for auxiliary storage purposes. The university provides the student with a complete outfit with the exception of shoes. This is issued to him at the time of registration. The student purchases his own combination padlock at the student store and files the combination with the clerk at the counter."⁹

The basket used in this plan is of very heavy wire mesh construction, spot welded with an overhanging lip in front which prevents loss of equipment. The clerk replaces soiled clothing through a four

⁹ La Porte, W. R. "University of Southern California Physical Education Hall." *The Journal of Health and Physical Education*, Vol. 2, No. 7, September, 1931, p. 10.

inch opening at the rear of the basket. The rear of the basket system is covered by two heavy wire mesh doors which cover 32 baskets. A rubber-tired ball-bearing truck is used for exchanging equipment. At the rear of the basket shelf is a little flanged strip in which is a card containing the name of the person holding the basket, together with the sizes of the various items of equipment. By looking at the card the clerk knows exactly what articles to place in the basket. A rotary shelving unit is available for transient users and for the storage of balls and other necessary equipment. The entire area within the basket unit is locked off from access by students and screened windows at the ends of the aisles make it possible for the attendant to see the entire locker area. Moreover, the counter arrangement is such that the clerk has direct supervision of the major shower units.

The DePauw University "Post Office" Plan for Men and Women.—

Until recently the locker situation at DePauw was similar to that in many colleges and universities. If space and facilities were at all limited the available lockers were assigned to freshmen and sophomores in required classes and members of varsity teams. Upperclassmen had difficulty in securing locker privileges.

Upon the payment of a fee of eleven dollars at the date of registration the department of physical education provides each student with a clean uniform, towel, box locker with basket, and a combination lock for four years. No refund is made on this payment after the student begins his third semester at the university. Students withdrawing before the beginning of the third semester may obtain a refund of four dollars.*

The "post office" plan¹⁰ is similar to the method described for the University of Southern California. The men's locker room which formerly accommodated 650 large lockers, now contains 1000 box lockers and 400 large lockers. The 15 x 15 x 12 box lockers shown in the picture are 18-gauge steel and contain a 12 x 13 x 8 wire basket. The doors of the box-locker are equipped with a hasp in which a combination lock may be used. The rear of the locker is open to permit removal of the basket by the attendant. A metal strip or drop flag is suspended so it swings on a hinge at the top and rear of the locker. If this device has dropped down it indicates that the basket has been removed by the student, the contents are probably soiled, and need to be exchanged. As the attendant returns the basket the drop flag

* See page 274.

¹⁰ Messersmith, L. L. "Administration of a Gymnasium Box-Locker Plan." *The Journal of Health and Physical Education*, Vol. 4, No. 7, September, 1933, p. 28.

ADMINISTRATION IN COLLEGES

DEPAUW UNIVERSITY
DEPARTMENT OF PHYSICAL EDUCATION

..... has paid \$.....
and is entitled to uniform, towel and locker privileges.

Locker No..... Lock No..... Comb. R..... L..... R.....
Refunds:

Return of refund:
\$..... Date..... \$..... Date.....

Withdrawals:
Date.....
Not Valid
unless stamped by
the Treasurer

AGREEMENT:
In accepting articles of equipment from DePauw University, I hereby agree to become financially responsible for same according to the price list posted on the bulletin board, and to abide by all rules and regulations concerning use of equipment.
Signature.....

DEPAUW UNIVERSITY
DEPARTMENT OF PHYSICAL EDUCATION

TREASURER:
..... has paid \$.....
and is entitled to receive a complete gymnasium uniform, except shoes, upon presentation of this card properly stamped by the Treasurer, to the custodian in the men's locker room in Bowman Gymnasium. The payment of this fee entitles the student to the use of a clean uniform, locker and towel privileges for four years.
Locker No..... Lock No..... Comb. R..... L..... R.....
Refund of all or any part of this deposit will be made only when authorized by the department head or his agent.

TREASURER:
Please refund to the student whose name appears above \$.....
Date.....
.....
Dept. Head or Agent

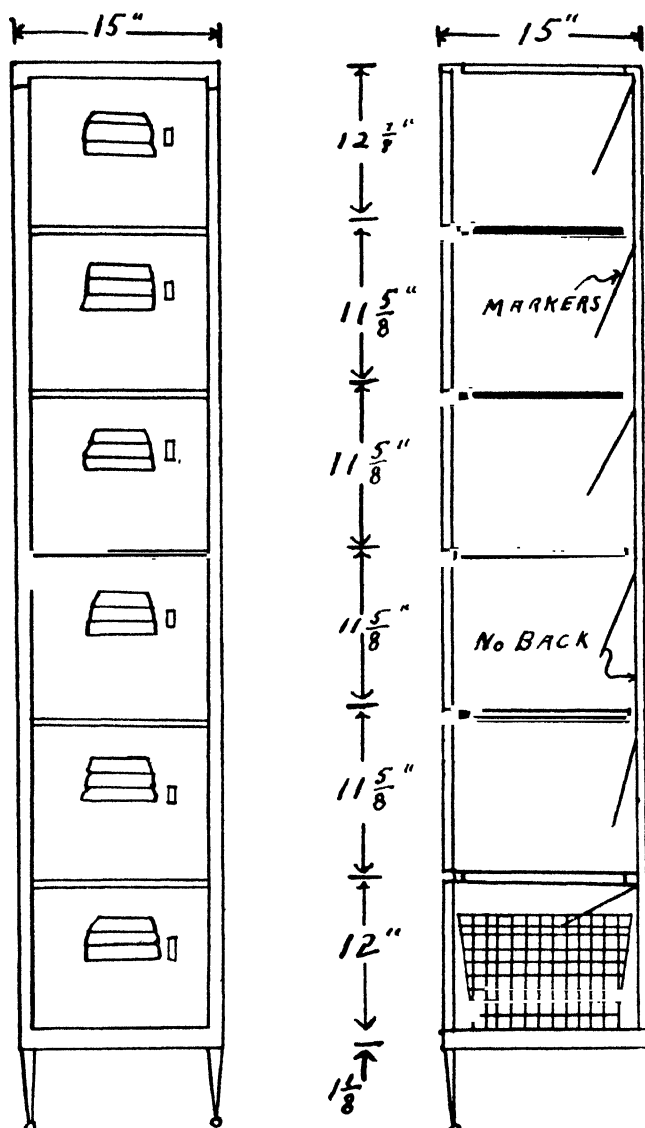
Not valid unless stamped by the Treasurer.

DEPAUW UNIVERSITY
DEPARTMENT OF PHYSICAL EDUCATION

TREASURER:
..... owes \$.....
for use of gymnasium, uniform and locker privileges.
.....
Dept. Head or Agent

REFUND		RETURN OF REFUND	

is pushed up so that it rests in a horizontal position on the top of the equipment. Thus, one glance at the metal flag tells the story to

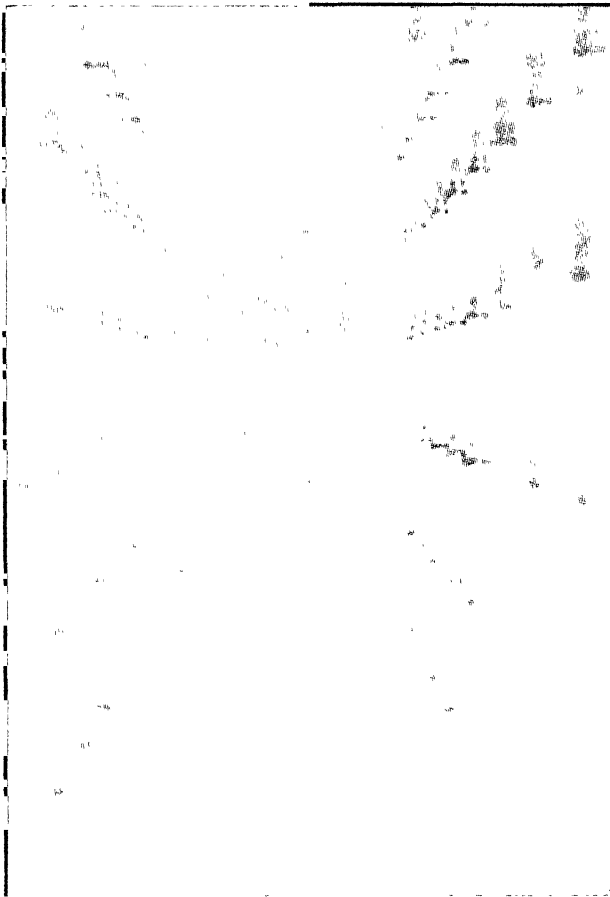


Front and side view of lockers showing doors, baskets, and markers in rear

BOX LOCKERS, DEPAUW UNIVERSITY (Note the dimensions).

the attendant. The horizontal position indicates that the basket has not been removed since last inspected and, therefore, the contents are

clean. If the metal flag has dropped to the vertical position the attendant inspects the equipment and makes the necessary changes. Box-lockers are arranged in rows in one end of the locker room and are closed in the rear to everyone but the attendant. He acts as the "postmaster" in keeping equipment of the proper size in the various baskets. A screen covers the box-lockers and the aisles, while sliding



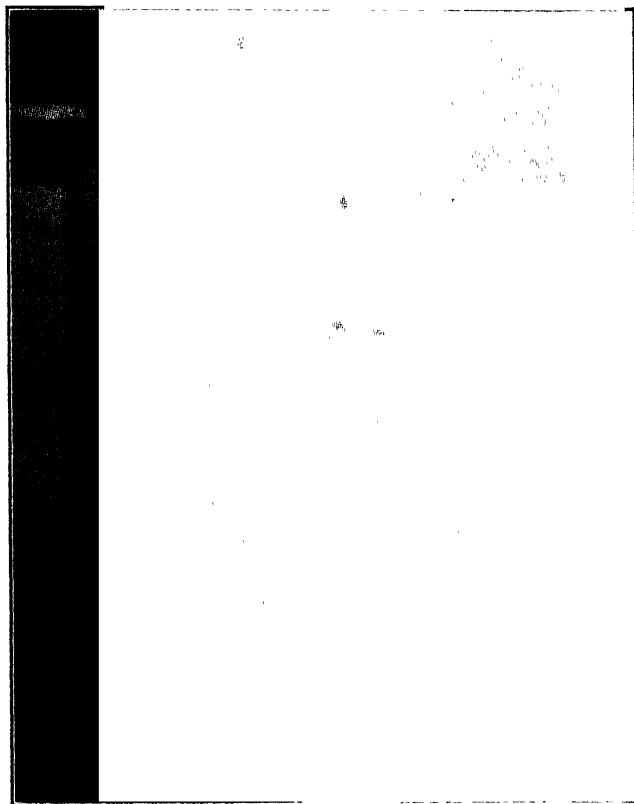
OUTSIDE VIEW SHOWING BOX-LOCKERS AND COMBINATION LOCKS, DEPAUW UNIVERSITY.

screens at the rear of the lockers prevent the stealing of equipment through the rear of an adjoining basket. The sliding screens are suspended on a track and may be easily moved back and forth along the aisle by the attendant.

The student secures his equipment in much the same manner as a citizen in a small community secures his mail from his private post

office box. He removes the combination lock, secures the basket, selects any available large locker, and dresses for activity. He places his wearing apparel in the large locker and fastens it securely with the combination lock.

The plan has certain advantages over the system of storing baskets in a basket room because the congestion around the basket window



VIEW FROM ABOVE SHOWING SCREENS OVER THE AISLES INSIDE. BOX LOCKERS, DEPAUW UNIVERSITY.

during the change of classes is avoided. Moreover, the students have access to their baskets at all times without calling for the services of the attendant, who can make the exchange of equipment at times most convenient for him.

The basket-locker plans described should be equally desirable for women or men. DePauw, for example, has recently inaugurated the "Post Office" Basket-Locker Plan for Women. Trapp¹¹ suggests wire

¹¹ Trapp, D. V. "Solving Gymnasium Storage Problems." The Journal of Health and Physical Education, September and October, 1930.

baskets of a standard size $8\frac{1}{2} \times 11\frac{1}{2} \times 13$. Some directors prefer baskets which are $8 \times 9 \times 13$ while others use those $9\frac{1}{2} \times 10 \times 5$. If a basket system is used sufficient lockers should be provided to accommodate the greatest number of students (peak load) participating in activities at any one time. Winters¹² found that one locker should be provided for every three baskets although some individuals think a ratio of one to five sufficient.

Towels.—Loss of towels has long been one of the most vexing problems of directors of physical education. Under the old plan, where students were expected to furnish their own towels, it was not uncommon to find individuals using the same towel for weeks or for an entire semester. Under the more recent plan, whereby the department furnished the towels, it was not unusual to find great numbers of these missing articles in rooming and fraternity houses.

THE RICE INSTITUTE
DEPARTMENT OF PHYSICAL EDUCATION
LOST EQUIPMENT NOTICE

Mr. Basket No.

A check of the physical training equipment issued to you shows that the following articles are missing:

This equipment must be returned immediately; otherwise you will be charged for it in the Bursar's Office, and not be permitted to enter any examination or receive any academic credit from The Rice Institute until the charge is settled.

Sincerely yours,

HARRY A. SCOTT.

THIS FORM INDICATES THE PROCEDURE IN REGAINING LOST EQUIPMENT.

Rochester "Self-Service" Plan.—A method of handling towel service under the individual locker system, which has recently been inaugurated at Rochester University, apparently operates successfully. The department of physical education pays a towel concern to supply the necessary towels. The institution does not own the towels. On the other hand, the company owns the towels, keeps them laundered, and has a large quantity of them available to students on a service counter in the gymnasium locker room at all times. There is no attendant to pass out the towels. The bather helps himself. Of course,

¹² Winters, A. R. "Report of the Committee on Construction and Material Equipment." *Proceedings, Society of Directors of Physical Education in Colleges*, 1929, pp. 41-50.

at the end of the year if the company found that a great many towels were missing the fee for this self-service naturally would be higher the following year. This plan has certain advantages since the department need hire no towel attendant, and after paying the fee it is no longer annoyed with the towel problem for that year.

Probably the best solution to the towel problem is the basket system. The student pays a reasonable sum for a service which keeps him constantly supplied with a clean towel without the frequent annoyance of waiting before or after the bath while towels are being exchanged. Moreover, the loss of towels is reduced to a minimum by this system. Towel losses may be further reduced by providing a towel shelf or bar of non-rustable material near the showers and in view of the bathers.

Soap.—From an administrative standpoint the director of physical education will secure better cooperation in maintaining high standards of cleanliness by making it easy and convenient to obtain soap as well as towels. Individual soap, common soap boxes, powdered soap, or cake soap are not recommended. Liquid soap is being installed in a majority of the newly constructed physical education buildings. This fact would seem to indicate that this method of dispensing soap to bathers has proved most satisfactory. This system eliminates the disconcerting and insanitary problem of having small cakes of soap thrown about the floor of the shower room.

Laundering Equipment.—If a central laundry system is operated by the institution physical education equipment probably can be most economically laundered by this means. In small institutions where the quantity of materials is not large there is some doubt about the desirability of having the equipment laundered by the department. In some communities a commercial laundry will do it cheaper than can possibly be done otherwise. On the other hand a central laundry system, installed to do work for the entire college or university, should be used to clean physical education equipment. At Wittenberg College the department of physical education launders its own equipment as well as that of the entire institution including the bedding and towels of the dormitories.

Marking Equipment.—Various methods of marking equipment have been used in schools and colleges. Indelible laundry ink is undoubtedly the most satisfactory for a majority of the articles of equipment. Large rubber stamps with four digits which can be changed are valuable for stamping dates, sizes, serial numbers or other distinguishing marks on sweatshirt, jersey, and pants. Manufacturers may be asked to sew small oblong pieces of felt around the back of the neck of jerseys and the upper part of socks or stockings

so the garment may be stamped. Leather goods may be treated similarly. Ball bats should be stamped or branded on the ends.

Some institutions have found it desirable to stamp the date the equipment was issued on the garment as well as the size, or serial number, or both. If four digits were used the first two (33) would represent the year. After several seasons the director could easily tell how well the equipment was wearing.

Storage of Equipment.—Storage of equipment is as important as its care while in use. The storeroom should be large enough to easily accommodate all equipment, it should be well ventilated and so located in the building that it has several windows to allow outside air to enter. The old practice of storing equipment in the attic, cellar, or behind the coal bin or boiler cannot be recommended. Although nothing standard has been developed, steel shelving is desirable, if finances permit, since it is indestructible and facilitates the moving of articles of equipment.

The varied materials in use by departments of physical education makes cleaning, marking, and storage matters of considerable study. Leather goods require one treatment, woolen or knit goods another. Moth proofing is necessary in preserving some materials.

Custodian or Stock Clerk.—The stock clerk or custodian of equipment may serve a number of purposes. He should operate the basket system. If it is the "post-office" plan described above he can do this alone at times most convenient to him. If baskets are passed out between classes two or more student assistants will probably be needed during the rush. Under the individual locker plan the custodian is the dispenser of towels. He should be responsible for the safekeeping of balls, bats, punching bags, and all athletic equipment. A typical equipment card is shown on page 281. In addition, he should be able to make the ordinary repairs to damaged equipment.

Finally, it is desirable to establish a checking service with the custodian for the safekeeping of watches, wallets, rings, bracelets, and other valuables commonly carried by college men and women.

Game and Gymnastic Equipment.—The college department which is provided with a very limited sum to use for the purchase of equipment should make a very careful selection of the articles most useful in a modern program. Game equipment, such as balls, bats, and bases should be provided first. Mats, ropes, and piano should probably be bought next in that order. In fact, every gymnasium should be equipped with game equipment, mats, ropes, and piano. If funds are still available suspension and vaulting apparatus should be provided. A phonograph and records, a collapsible canvas golf cage, archery backstops, extra basketball goals, mat truck, indoor hurdles,

high jump standards, and baseball targets are all useful in a gymnasium.

Mats.—Wrestling and tumbling mats require constant attention or they become dangerous sources of infection. Attempts to keep mats clean and sanitary, by such methods as sweeping, beating in the air and sun, vacuum cleaning, painting and scrubbing, and washing with antiseptic solution have not proved satisfactory. The use of mat covers is by far the best solution provided they are changed daily and are thoroughly clean when put on. Rubberized mat covers, an innovation within recent years, is recommended by certain individuals who have given them a fair trial. This cover is satisfactory not only

SIGNATURE					LOCKER					CLASS					
	OUT	IN	OUT	IN		OUT	IN	OUT	IN		OUT	IN	OUT	IN	SPECIAL EQUIPMENT
UNDER SHIRT					GLOVES					TIGHTS					
UNDER DRAWERS					COTTON GLOVES					PUSHERS					
JOCK					SWEATER					MUFFLERS					
COTTON BOX					STICK					SWEAT SUITS					
WOOL BOX					BALL					DISCUS					
STOCKINGS					HEAD G/F/R					HAMMER					
GARTERS					KNIFE PAD					SHOT					
BELTS					SHOULDER PAD					JAVELIN					
INNER SOLES					CAP					SOCCER SHIRT					
JERSEY					MAT					SOCCER PANT					
PANTS					SLAZER										
SHOES					INNER HOSF										
SWEAT SHIRTS					CORSET										
GLASTONBURY					TIN JOCK										
HOOD					SHIN GUARD										
LONG DRAWERS					SKATES										

NAME																									LOCKER																									CLASS																								
<small> TYPEWRITER PLEASE NOTE—THIS SCALE CORRESPONDS TO TYPEWRITER (PICA) SCALE—SET PAPER GUIDES SO THAT CARD SCALE WILL REGISTER WITH TYPEWRITER SCALE WHEN CARD IS TURNED INTO WRITING POSITION. START HERE THERE (S) POINTS FROM LEFT EDGE OF CARD. USE OTHER POINTS OF SCALE FOR OTHER DIVISIONS OF VISIBLE TITLE. SET TABULATIONS TO INSURE PERFECT ALIGNMENT OF EACH DIVISION OF INFORMATION. FOLD BACK OR REMOVE STOP AFTER TYPING. USE NEW TYPEWRITER DESIGN. </small>																																																																										

A CARD USED FOR RECORDING ISSUED ATHLETIC EQUIPMENT.

from the sanitary standpoint, but it eliminates some of the dangers of chafing and burning the skin caused by some other materials. Moreover, the rubber is soft and easily washed.

Students should not be permitted to drag mats over the floor but should be taught to roll them and carry them properly.

Records.—The experience of a department in the administration of physical education equipment will necessarily result in the adoption of certain records, card forms, and regulations which meet the needs of that particular institution. An attempt to standardize forms which would be suited to the varying situations in all our colleges and universities undoubtedly would be carrying standardization too far. The Individual Permanent Record Card* has a place for recording the

* See Chapter VIII, page 160.

Permanent Uniform Record, and another for a Record of Lost Equipment, including article lost, date, bill number, and amount. The agreement, which is signed by the student reads as follows: "In accepting articles of equipment from DePauw University, I hereby agree to become financially responsible for them according to the price list posted on the bulletin board, and to abide by all rules and regulations concerning the use of equipment." Local address, basket number, lock number and combination all appear on this card. This record card may be used for men and women.

Administrative Standards and Policies.—Certain policies should guide in the administration of physical education equipment in colleges and universities. The following are suggested: ¹³

A regulation costume should be required in physical education classes.

The costume for men should consist of sweatshirt, jersey, trunk, supporter, socks and rubber soled shoes. The costume recommended for women should be a one-piece, sleeveless, V-neck, romper style of light colored cotton material, cotton ankle socks, sweatshirt, and white canvas, rubber soled shoes.

The institution should provide and launder the physical education costume at a minimum cost to the student.

A clean costume or uniform should be provided men and women students each time they appear for participation in physical education activities, or at least as often as necessary to prevent the wearing of soiled clothing.

The department should keep uniforms clean and in good repair. This may require laundering the costume each time it is worn.

The department should furnish and launder towels at a minimum cost to students.

In purchasing equipment, the department should ask for bids stating specifically the kind, amount, and quality of articles.

Each article of equipment of approximately \$25.00 valuation or more, which is purchased by the department, should be bid on separately.

Samples should accompany all bids on equipment.

The department should provide the facilities and personnel for storing and caring for equipment.

An attendant or custodian, and assistants, if needed, should be provided to distribute and collect equipment and to operate the basket-

¹³ Hughes, W. L. *The Administration of Health and Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1932, Section V, pp. 78-82.

locker system at all hours when the physical education facilities are in use.

The department should provide the facilities and personnel for repairing equipment, or should make arrangements for having the repair work done outside the department.

Exact records should be kept of the equipment issued to students, and students should sign for such equipment.

Students who loan articles of clothing or equipment to other persons should be liable to loss of physical education credit and forfeiture of gymnasium basket and locker privileges.

Students who lose physical education equipment belonging to the department should be required to pay for it before credit is granted by the institution.

An inventory should be made of physical education equipment at least twice annually.

Game equipment (balls, bats, etc.), mats, ropes, and piano should be a part of the equipment of every gymnasium.

Clean mat covers should be provided for the wrestling and tumbling mats daily or as often as necessary to keep them strictly sanitary. Some covers may be turned over the second day. Others may be washed.

Mats should not be dragged over the floors.

Apparatus should not be suspended from a height of less than 22 feet, and it should be tested for safety at least twice a year.

The "Post-Office" Basket-Locker system is recommended.

If a basket system is used there should be sufficient lockers to accommodate the greatest number of students (peak load) participating in activities at any one time.

If a basket system is used there will be need for one locker to every three to five baskets.

The standard size for wire equipment baskets is 11½ inches wide by 8½ inches high by 13 inches long. Some persons prefer, however, sizes 9½ inches by 10 inches by 15 inches or 8 inches by 9 inches by 13 inches.

In institutions where the basket system is not in use, the department should provide a sufficient number of lockers to accommodate all students and faculty who desire to participate in activities.

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CHAPTER XV

PHYSICAL EDUCATION BUILDINGS FOR COLLEGES AND UNIVERSITIES

Adequate Facilities.—The problem in college physical education to-day is one of providing adequate facilities rather than one of inducing students to participate. The term *adequate*, however, has taken on a new meaning during recent years. The enrichment of the curriculum by the inauguration of a game and sports program to replace formal gymnastics has made new demands for space and facilities. At one time available funds were spent for old-fashioned gymnasia equipped with wands, dumb-bells, stall bars, and similar apparatus. Very little planning of the construction was needed. The administration of the program was simple. More recently many fields and buildings have been constructed and administered by individuals who were concerned with size or seating capacity rather than a well rounded program of physical education. Many college gymnasia have been built with a main floor designed only for basketball and seating facilities for the huge crowds attracted to the games. Construction mistakes are common. The need for the type of facilities best suited to the average college man or woman is not always clearly recognized.

The Committee on Construction and Material Equipment.—Mindful of these conditions the College Physical Education Association,* has long provided a Committee on Construction and Material Equipment. In 1923 this committee reported in pamphlet form a study of Physical Education Buildings.¹ In more recent years the committee, under the chairmanship of Professor A. I. Prettyman, has been collecting in the library at Hamilton College plans, drawings, specifications, books, reprints, and articles having to do with the construction of physical education buildings, courts and fields. Institutions where new gymnasia, stadia, courts, or fields have been constructed recently cooperated with the committee by sending specifications and the names and addresses of architects, engineers, and contractors. The plans

* Formerly the Society of Directors of Physical Education in Colleges.

¹ "Physical Education Buildings, Part I. Gymnasium and Lockers." Prepared by the Committee on Construction and Material Equipment of the Society of Directors of Physical Education in Colleges, 1923. Dr. G. L. Meylan, Chairman.

were carefully repaired, ironed, covered, and hung in the Hamilton College Library where they were available for inspection by interested persons. A list of the collection was sent to all members of the association, to colleges and universities, and to contributing architects. In addition, the committee collected catalogues and reprints which are pertinent to construction, equipment, and maintenance of physical education facilities. In 1929 Winters² reported a valuable study of trends in physical education facilities and gymnasium construction. This effort was actuated by the need for working principles of plant construction and the desire to keep pace with the trend in curriculum construction. Frequent requests were made by members of the Association and others to have the plans sent to them for study. Obviously this was impractical, so the committee considered various schemes to make the information more available. To partially fulfill this need it has been the practice the last few years to publish one or more of the plans along with the annual proceedings of the association. Plans of new buildings have been published as follows: the Payne Whitney Gymnasium at Yale in 1932; the new Indoor Athletic Building at Harvard in 1931; Rochester's Physical Education Building in 1930; and others prior to 1930. The best results have been obtained by publishing plans of facilities which have been in use a year or more. Architects have given exact plans in single line drawings of floors, elevations, and all specifications. Directors have reported practical uses, erection and maintenance costs, type of activity for which the facilities are suited, and similar items. Furthermore, the committee has asked these men to be critical as well as constructive, to point out defects as well as the outstanding advantages of the new equipment, and to recommend improvement.

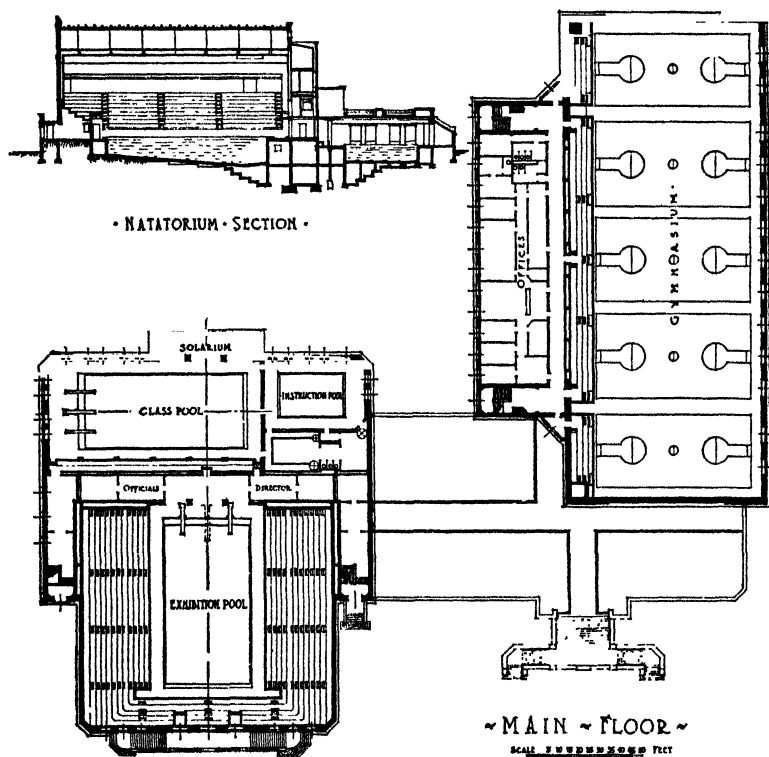
It was also felt that the materials might be more useful to the membership if placed in a more accessible location. Since approximately four out of every five national meetings are held in New York City it was decided to place the plans in charge of the writer, a member of the committee, at Teachers College, Columbia University. They are now available (1934-35) for any one visiting the city and will be particularly convenient for members attending the national meeting. In 1924 Chairman Prettyman reported an outline for a pamphlet on "Playing Fields" which has never been completed.

The Need for Research.—There undoubtedly is a need for standards in design, construction, and maintenance of physical education buildings, courts, and fields. This is essentially a problem of research for

² Winters, A. R. "Trends in Physical Education Facilities and Gymnasium Construction." Proceedings, Society of Directors of Physical Education in Colleges, 1929, p. 41.

some individual or individuals who have the time, training and ability to study standards in detail. One or more graduate students might well perform this service through the official committee and under the sponsorship of the Association.³

PHYSICAL EDUCATION BUILDING



MAIN FLOOR OF THE NEW GYMNASIUM AT OHIO STATE UNIVERSITY.

In addition to familiarizing themselves with the references cited, and after studying the plans collected by the College Physical Edu-

³ The College Physical Education Association has sponsored three similar studies:

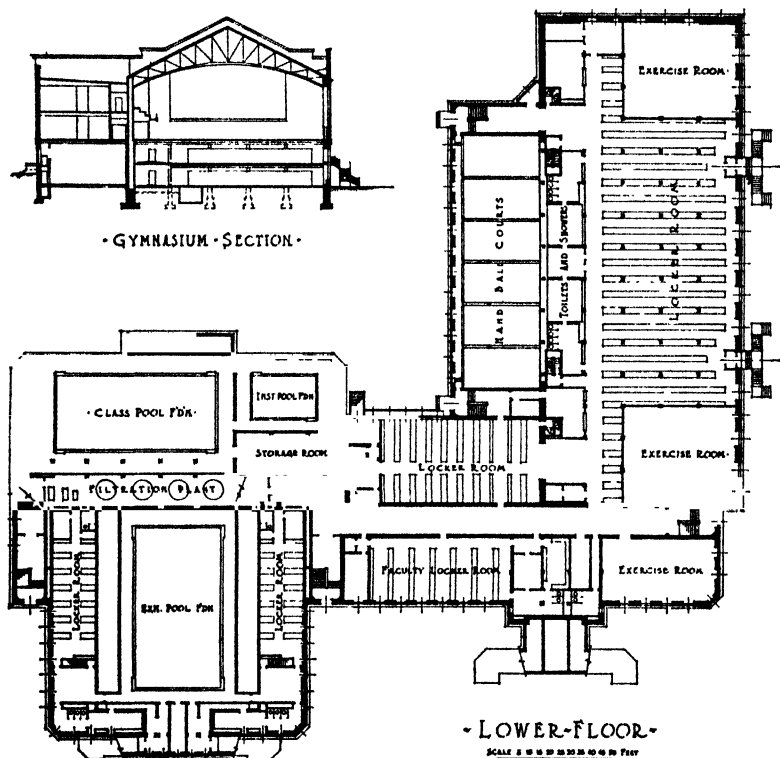
Scott, H. A. *Personnel Study of Directors of Physical Education for Men in Colleges and Universities*. Bureau of Publications, Teachers College, Columbia University, New York, 1929.

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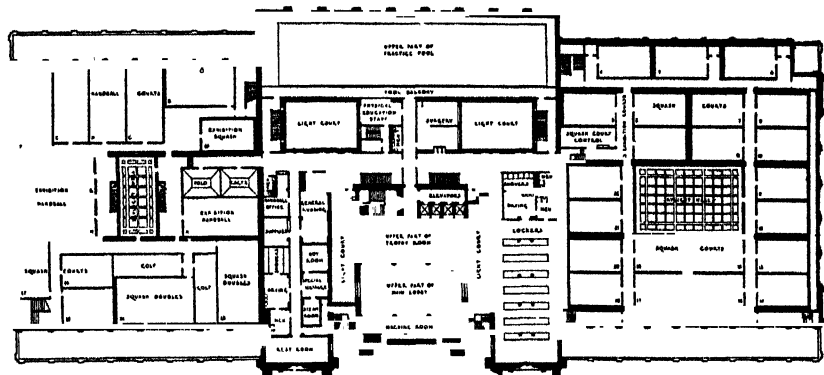
cation Association, building committees should also visit and examine the facilities of neighboring institutions. Moreover, many mistakes may be avoided and valuable features incorporated by consulting physical education experts, architects, engineers, and contractors. Plans, photographs, and data may be collected which will supply the experience and expert advice not obtainable in any other way.

PHYSICAL EDUCATION BUILDING

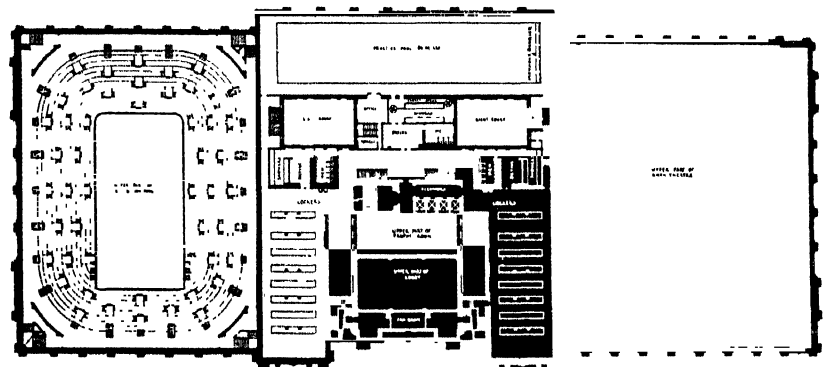


LOWER FLOOR OF THE NEW GYMNASIUM AT OHIO STATE UNIVERSITY.

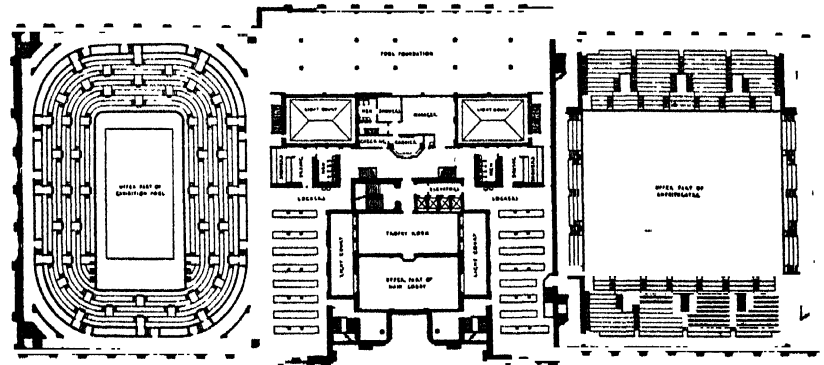
Physical Education Buildings.—Gymnasiums of the traditional type were small, low-ceiling halls equipped with apparatus for formal gymnastics and devoid of floor and spectator space for informal games. Basketball brought about higher ceilings and greater floor area and seating capacity. The modern informal game type of program has changed the nature of physical education buildings. There is a demand for fields and floors where all students may participate in a variety of activities and during all seasons of the year. Field houses,



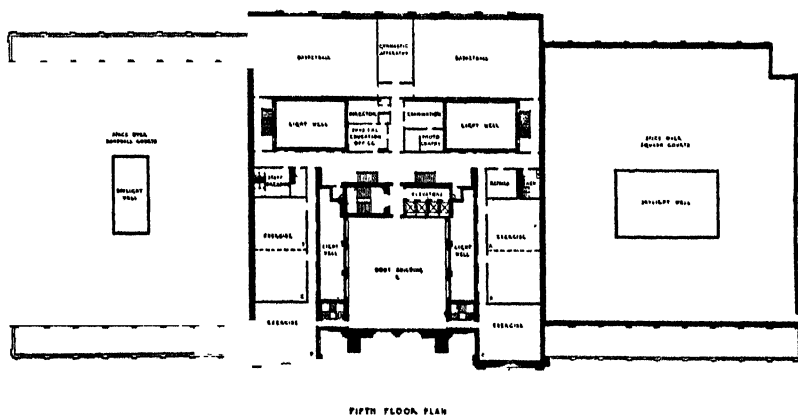
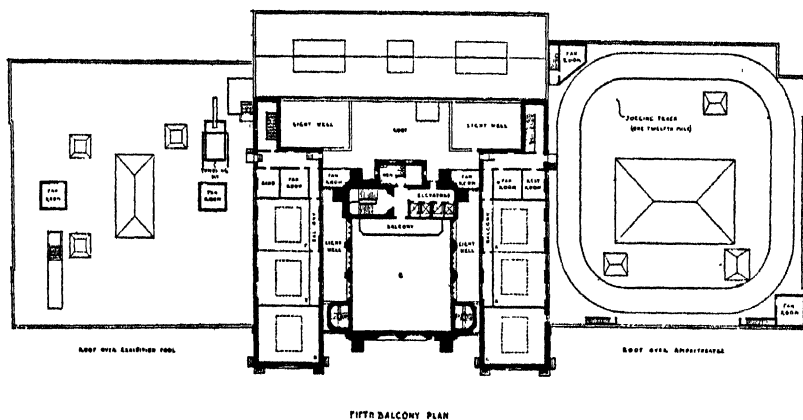
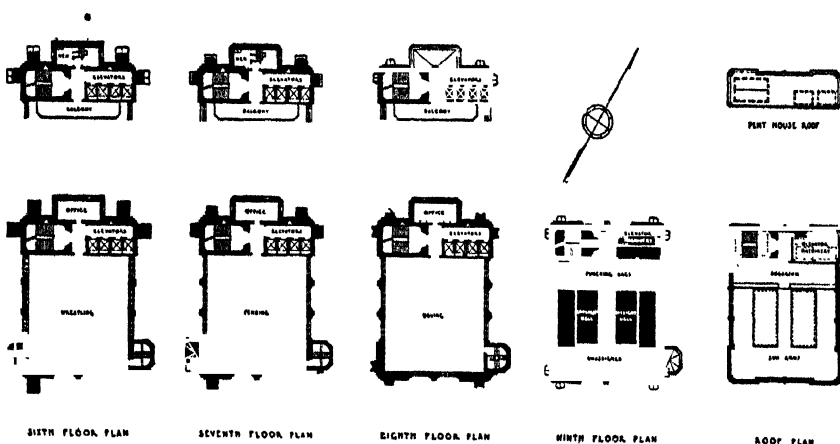
FOURTH FLOOR PLAN



THIRD FLOOR PLAN

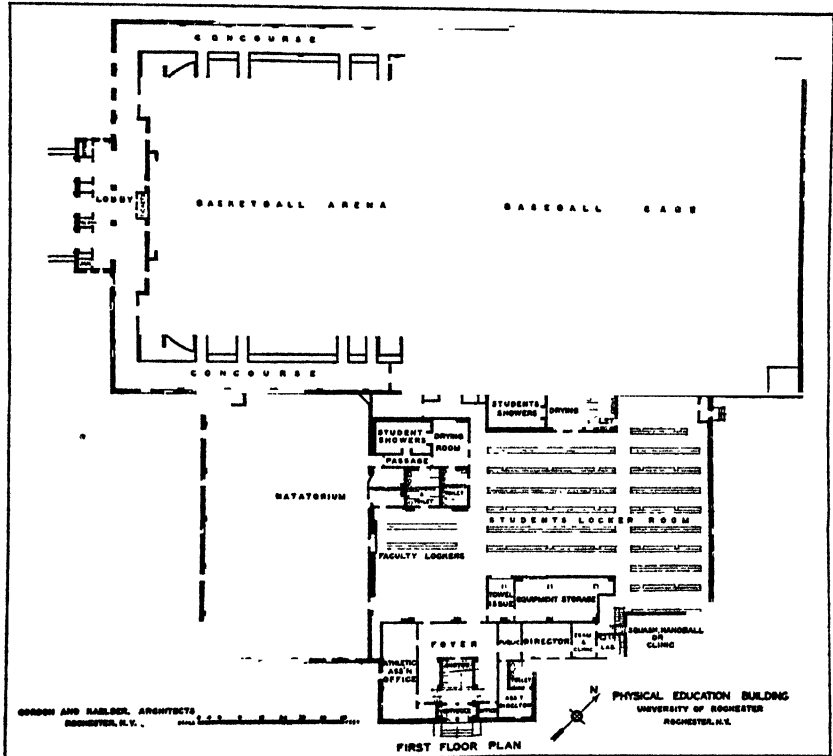


SECOND FLOOR PLAN



sports buildings, and modern gymnasias have been constructed to meet the demand.

Regardless of the type of building to be erected: gymnasium, field house, or a combination of the two, it is important that there be intelligent planning of size, shape, seating space, floors, walls, ceiling, windows, heating, lighting, ventilation, lockers, showers, and a host of other details.*



PHYSICAL EDUCATION FACILITIES AT THE UNIVERSITY OF ROCHESTER.
(Note the compactness of arrangement) -

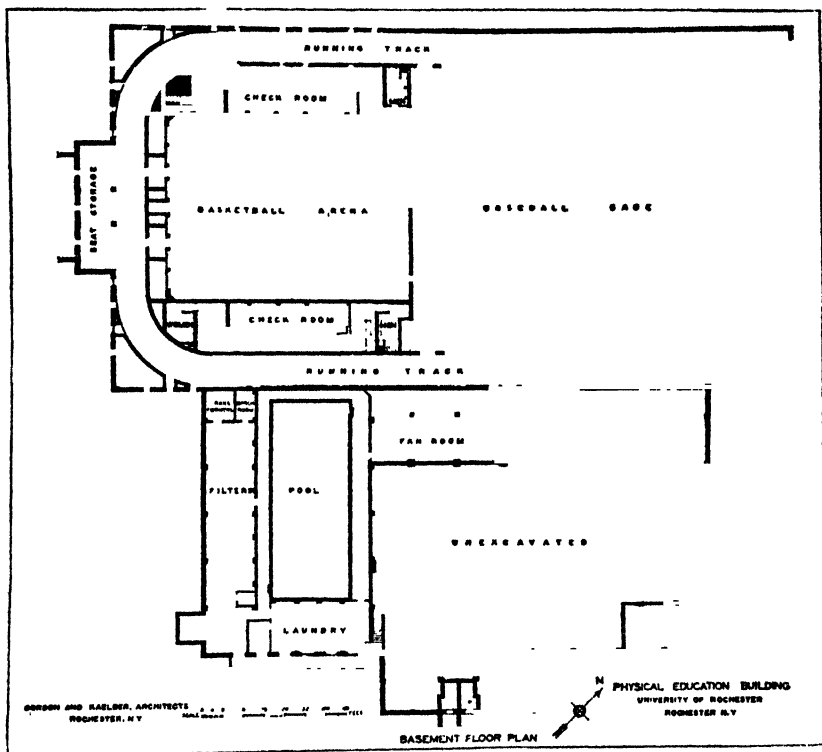
The following standards, covering the above items and arranged in concise form, constitute a brief, and necessarily incomplete summary of the recommendations based on present available information.

Main Floor Standards.—

Size: Widths of 80 to 100 feet and lengths of 120-180 feet are recommended. The median for recent construction is 100 x 160 feet.

* See pages 111-113 and 287-293 for building plans.

- Shape:** The architects' rule of "two to one" (*i.e. the length equals twice the width*) is a desirable proportion.
- Floors:** High grade maple is recommended. Experience has shown that an edge grain flooring must be used to prevent splintering, that it must be tongued and grooved, hardwood, and in long lengths.



PHYSICAL EDUCATION FACILITIES AT THE UNIVERSITY OF ROCHESTER.
(Note the compactness of arrangement)

- Floor** Boiled linseed oil and turpentine is very satisfactory.
- Finish:** Varnish and China wood oil have been used.
- Floor** Folding doors are not recommended. Nets are preferable.
- Division:**
- Walls:** Glazed brick is recommended. Glazed terra cotta may be used for several feet above the floor. Above this may be placed unglazed cream tile, which reflects light without glare. A sandy surface such as common brick will fall off in time. Hard brick, concrete, rough plaster, or stucco with rough surfaces are dangerous

and catch dust. Numerous coats of paint to fill the pores and smooth the walls are expensive. Plaster is easily damaged. Wood is not fireproof.

Ceiling: Wood, painted concrete, or tile have all proved very satisfactory. Acoustic plaster is desirable in some rooms.

Ceiling Height: The minimum height should be not less than 22 feet.

Skylights: Winters reported ⁴ that "only 8 of 23 recently constructed units include a skylight and that the advisability of a skylight seems very uncertain." According to the available figures Jallade, the architect, believes that both windows and skylights should be provided. Skylights give bright sunlight to a gymnasium. He states ⁵ "The objection to skylights besides leakage, which can generally be avoided by correct design, is loss of heat. Most gymnasiums having skylights are cold as the cold air drops from the skylight very rapidly. Therefore, skylights should not be used unless they have a sufficient amount of heating surface around the edge and unless there is a so-called 'ceiling light' to act as a drum and prevent cold air from dropping."

Windows: Mechanically operated swinging and louvre type are recommended.

Obstructions: No stairs, pipes, ducts, fountains, columns, doors, radiators, stall bars or other projections should be permitted to mar the clear flat-surface walls. Lights on walls should be recessed, if possible, and protected by a wire screen.

Drinking Fountains: Vitreous china bowls should be provided of the type in which the stream of water issues from the jet placed at the side of the bowl at an upward angle of 45 degrees. The water should reach its highest point in the center of the bowl so that water which touches the lips does not flow or fall on the orifice from which the water issues or become mixed with fresh water.

Balconies and Indoor Tracks: Balconies and indoor tracks are not recommended.

⁴ Winters, A. R. Op. cit., p. 46.

⁵ Physical Education Buildings. Op. cit., p. 16.

Locker Room and Locker Standards.—

- Shape:* The best arrangement of lockers is in rows perpendicular to the lighting wall with windows so arranged that they come between the rows. Large rooms should be square or nearly square. Small groups of lockers should be arranged in long, narrow rooms.
- Height:* Locker rooms should have a height of at least 10½ feet.
- Floor:* Cork, tile, or concrete with a color-hardened surface have proved satisfactory.
- Aisles:* Aisles should be fitted with thin corrugated rubber matting or similar material.
- Ceiling:* Ceiling should be plastered and painted white.
- Temperature:* A range of 70° F to 75° F seems best.
- Lockers:* Individual, single tier, steel, size 15 x 15 x 72 are recommended. 12 x 15 x 36 is also a convenient size.
- Locks:* Combination locks, with emergency master key control, are recommended.
- Fountains:* Fountains should be lodged in the walls, the depth of the recess being sufficient to prevent the projection of the fixture beyond the surface of the wall.
- Heating:* Steam heating is preferable. Forced and recirculated hot air is used. Some individuals recommend recirculated washed-air. The Harvard building is heated by means of a forced hot water system fully described elsewhere by the architects.⁶
- Ventilation:* Ventilation should be accomplished by mechanical means or by window-gravity method (in rooms having 100 occupants or less).⁷
- Lighting:* Studies indicate a preference for a diffused type rather than direct lighting. Shadows should be avoided. Lights should not glare into the eyes of participants or spectators. Ceiling lights should have reflectors and be so placed that they can be reached without a scaffold.

⁶ Coolidge, Shepley, Bulfinch and Abbott, architects. "Description of Architectural Features and Mechanical Equipment for the Harvard Indoor Athletic Building." *Proceedings, Society of Directors of Physical Education in Colleges*, 1931, pp. 160-161.

⁷ New York Commission on Ventilation. *School Ventilation—Principles and Practices*. Bureau of Publications, Teachers College, Columbia University, New York, 1931.

Baskets: One inch square mesh No. 15 gauge to 18 guage wire with $\frac{3}{16}$ inch top frame and $\frac{1}{8}$ inch diagonal brace are standard. The standard sizes are $8\frac{1}{2}$ " (wide) x 8' 13" (deep) x 8" (high) and $11\frac{1}{2}$ x 13 x $8\frac{1}{2}$. The 8 x 9 x 13 and $9\frac{1}{2}$ x 10 x 15 are sizes preferred by some physical educators.

Benches: Stationary type with yellow pine tops preferable.

Shower Room and Shower Standards.—

Number of Showers: One shower for every three persons during the peak load. 16 square feet should be the minimum space per shower with 25 square feet recommended.

Type of Shower Heads: A self-cleaning type of shower head which will supply a stream of varying size and force. Dual type valves or the automatic valve control with a chain pull and a ring on the end which can be pulled down and attached to a hook on the partition. In the latter type the temperature of the water is controlled by a thermostat. Temperatures may be fixed permanently and not subject to student control. Some showers are set for the warm bath, others for the cold. This type of shower also is economical. It requires only one pipe and one valve and no mixing adjustment. Moreover, there is no waste of time and water while the temperature of the water is being adjusted. The shower should also be of the adjustable neck wall type, arranged to spray toward the back of the booth. Valves should be placed so they may be operated without getting in the water.

Floors: Tile (ceramic, mosaic, terraza, non-slip, etc.) laid on concrete, with a membrane waterproofing underneath it and up the sides of the walls is the most popular. Impervious ceramic tile, preferably an inch square, will prevent slipping.

Walls: Tile or marble is recommended.

Soap: Liquid soap should be delivered through valve outlets placed midway between each two shower heads.

Towel bar: A chromium metal or other non-rustable bar upon which the bathers may hang the towel while taking the bath.

* Trapp, D. V. "Solving Gymnasium Storage Problems." *The Journal of Health and Physical Education*, October, 1930, p. 42.

Hardware: All hardware in the shower room (except towel bars) should be of brass or bronze.

Toilet Standards.—

Floors: Ceramic tile, or other non-absorbent material, in waterproof cement is most satisfactory.

Wainscoting: White or light cream glazed tile, opaque glass, or other non-absorbent material are in general use.

Bowls: Porcelain is recommended.

Locker Rooms, Basket System, and Shower Standards for Women.

The women's basket system should operate in a way similar to that described for the men (Chapter XIV). Individual panel steel dressing booths for women in place of the large dressing lockers may be necessary in certain institutions. Dressing booths, if provided, should be centralized in a room adjoining the showers. Doors of the booths should be equipped with hasps so the combination padlock taken from the box-locker may be used to lock the booth while the student is participating in some physical education activity. Compartments must be thief-proof and can be made so by protecting the upper area with an overhead wire mesh and constructing the side panels to reach to the floor or within a few inches of it. Bath towels for women should be large enough to be used as a robe in going to and from showers and dressing booths.

Hair dryers should also be provided.

Wrestling Room Standards.—

It is desirable to have padding two inches thick on all walls and over the entire floor. Wall padding of mats hung on straps is recommended as they are removable and easily cleaned. Floor mats should be made in sizes for easy handling and should be covered with washable mats, either canvas or rubber. The latter are gaining in popularity since they can be kept clean with soap and hot water.

Boxing Room Standards.—

A one inch canvas covered felt mat is recommended for the floors. A bumper pad about two feet in width and suspended on the wall surfaces at shoulder height is also desirable. Some modern gymnasias are being equipped with a take-down ring, hung from eye bolts in the wall at one end of the room. Locked steel cabinets are also provided so the boxing gloves may be kept on drying racks when not in use.

Other Standards.—

Individual or Corrective Room: This room should be equipped with mirrors, individual mats, bars, weights, ladders, and similar apparatus.

Offices: Office space for a desk and filing cabinet should be provided all members of the staff. The health service offices or examination rooms should be located if possible in direct connection with the locker rooms. (See Chapter XVIII).

Classrooms: These rooms should be equipped with platform, chairs, facilities for showing motion pictures, blackboards, etc. A dance studio connected directly to the women's gymnasium, a trophy and club room, a laundry room, and kitchen, etc., are other desirable parts of a modern gymnasium.

Sanitation: The gymnasium floor should be swept daily with sweeping compound or other similar material. The floor should be scrubbed at least once each week. The locker, shower, training and toilet room floors and locker room benches should be thoroughly cleaned with hot water and soap and disinfected daily.

Maintenance and Repairs: A well constructed gymnasium should last indefinitely if cleaned, washed, and painted at frequent intervals. All necessary repairs should be undertaken immediately. A periodic examination should be instituted. Apparatus should be tested, bolts and screws tightened, leaks plugged, and windows repaired.

Courts.—

Handball, squash racquets, and tennis courts are essential for any modern program of college physical education. Handball seems more popular in the middle west, while squash racquets is favored in colleges of the east.

Handball Court Standards.—

Size: Standard A.A.U. four-wall soft ball courts are 22 feet wide by 22 feet high by 46 feet long. Standard A.A.U. one-wall courts are 20 feet wide by 16 feet high by 34 feet long. An entirely satisfactory game may be played on much smaller courts.

Number: There should be provided at least one four-wall handball court for every 100 students enrolled in the institution.

- Floors:* Maple is recommended. Some persons favor pine.
- Walls:* The front wall should be maple or solid concrete. Side and rear walls may be yellow pine, or solid concrete.
- Ceiling:* Hard, fine concrete plaster is preferable.
- Color:* Walls and ceiling of oyster white will eliminate glare and give adequate light. Buff colored walls and natural maple flooring is also used.
- Lights:* Rows of lights should be inset in the ceiling about a foot from the wall along both sides and the front of the court. The inner side of the recessed area should have reflectors which light downward and against the side walls to prevent shadows and glare in the eyes of players. The lights should be covered with panels of wire glass flush with the ceiling. The light switch should be just outside the door, or doors may be equipped with automatic switches which turn the lights on when the doors are closed and the courts are in use and turn them off when the doors are open.
- Doors:* Rear entrance doors should be hung with hinges and latches flush with the wall. A wire glass panel should be provided in the rear doors and flush with the inside surface. This makes it possible to see into the courts without entering.
A small thumb ring latch fitted flush with the metal surface will be needed to open the doors from the inside.
- Cuspidors:* Each court should contain a cuspidor which is covered by a metal door fitted flush with the wall.
- Galleries:* Spectator galleries should be provided at the rear of the handball courts.
- Wesleyan's Courts:* Wesleyan University has found a very economical method of building handball courts apart from the gymnasium or field house. Five courts have recently been constructed largely of the old lumber available about the campus. These courts are 31 feet long, the front wall is 14 feet high, and the rear wall is 8 feet high.
There has recently appeared on the market^a a type

^a The Wayne Gymstand. The Wayne Iron Works, Wayne, Pennsylvania.

*Combination
Court and
Bleacher
Seat:*

of folding bleacher seats or steel-portable stands for indoor use which, when folded back against the wall of the gymnasium, present a smooth wood playing surface for one-wall handball courts. Since the modern gymnasium must provide for mass seating and at the same time supply maximum floor space for large classes this combination of handball court wall and folding bleacher seat meets both requirements.

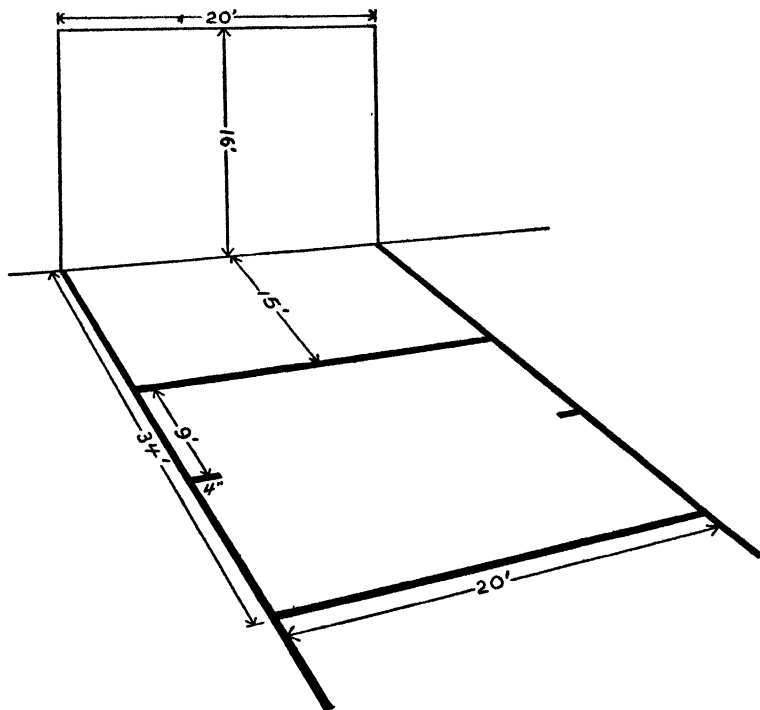


Diagram Giving Dimensions of a Standard Single-wall Court

ONE-WALL HANDBALL COURT.

Squash Racquets Court Standards.—

Size: Dimensions adopted by the United States Squash Racquets Association, 18½ feet wide, 16 feet high and 32 feet long.

Number: There should be provided at least one standard squash racquets court or handball court for every 100 students enrolled in the institution.¹⁰

¹⁰ Hughes, W. L. The Administration of Health and Physical Education for Men in Colleges and Universities. Bureau of Publications, Teachers College, Columbia University, New York, 1932, p. 79.

- Telltale:** This should be a *removable* piece of sheet metal as long as the court is wide, and $1\frac{1}{2}$ feet high. It should be placed at the bottom of the front wall. The upper part of the telltale should be nailed to a strip of wood that projects $1\frac{1}{2}$ inches from the front wall.
- Floor:** Maple is recommended. One and one half by $2\frac{5}{8}$ inch tongued and grooved, air dried, clear, hard maple running parallel with the sides of the courts. The sub-floor should be $2\frac{1}{2}$ " x $1\frac{3}{8}$ " tongued and grooved sheathing, preferably fir, spruce, or yellow pine running diagonally, laid on $2\frac{1}{2}$ inch face thoroughly nailed. A layer of builders' deadening felt $\frac{1}{2}$ " thick should be laid between the floors.¹¹
- Walls:** Front and back walls should be finished in one inch by $2\frac{3}{4}$ inch tongued and grooved on $2\frac{3}{4}$ inch faces, air dried, clean, hard maple running vertically. Sheathing and the felt should be the same as specified for the floor. Side walls should be constructed the same as the floor. Plaster walls are not recommended.
- Color:** White.
- Lights, Doors and Gallery:** The provisions for lights, doors, and gallery should be the same as for the handball courts.

Indoor Tennis Courts.—

Hadden¹² advocates a new type of indoor tennis court building which solves the problem of how to obtain the best diffused natural and artificial light, and how to achieve the maximum overhead room for high lobs without great waste of space.

Bowling Alleys.—

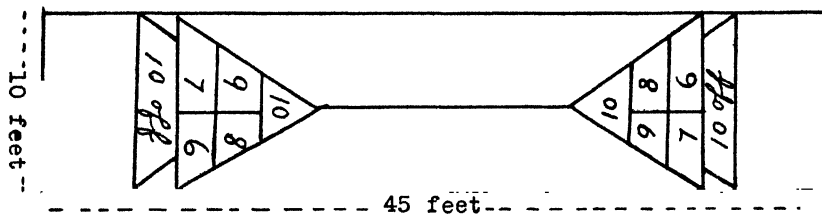
The extent to which college men and women enjoy bowling if alleys are provided in the gymnasium is really astonishing. Unfortunately, few college gymnasiums are equipped for this excellent sport, but in institutions where the activity is promoted it may well form a part of the required, intramural, intercollegiate, and recreational program. As a "carry over" sport it ranks as one of the best. Moreover, it appeals to the students and is one of the most popular activities on the program where it has been offered.

Since the birth of the American Bowling Congress the rules have been standardized and the game has become more scientific. The

¹¹ Fisher, H. T. "Squash Courts." Architectural Record, August, 1931.

¹² "Covered Lawn Tennis Courts," by "Racquet." The Sportsman, July, 1929.

original cost of the alleys is rather high but the expense of promoting the sport thereafter is negligible. The alleys should not be less than 41 nor more than 42 inches wide.¹³ The length from the center of the No. 1 pin spot to the foul line is 60 feet. Back of the foul line there must be sufficient space for a clear run of not less than 15 feet. Pin spots, $2\frac{1}{4}$ inches in diameter, should be clearly and distinctly described on or imbedded in the alleys 12 inches apart from center to center. Those numbered 7, 8, 9, and 10 are placed 3 inches from the



A SHUFFLEBOARD COURT.

pit edge of the alley measuring from the edge to the centers of the spots.

Gutters, on either side of the alleys, should begin at the foul line and extend parallel to the alleys to the pit. They are 9 to $9\frac{1}{2}$ inches wide.

Volley Ball Courts.—The volley ball court should be 60 feet long by 30 feet wide and free from obstructions at least 15 feet high. It is recommended that 2 inch boundary lines be placed at least three feet from walls or other obstructions.

Indoor Baseball Diamond.—Each side of the indoor baseball diamond is 27 feet long, and the distance from home to second base, and from first to third is $38\frac{1}{4}$ feet. Home plate is one foot square, bases are $1\frac{1}{2}$ feet square, the pitcher's box is 7 x 3 feet, and the nearest line of the pitcher's box is 23 feet from the center of home base.

The batsman's box, one to the left and one to the right of home base is 4 feet long and 3 feet wide, extending one foot in front of and three feet behind a center line drawn through the home base, with its nearest side six inches from the home base.

Shuffleboard.—The shuffleboard court should be from 40 to 50 feet long and 10 feet wide. The game is played with round wooden discs which are delivered by means of a cue.

Boxing, Wrestling and Fencing Rooms.—The well-equipped boxing room might well provide a floor with a one-inch felt mat, canvas covered, and a bumper pad about two feet in width suspended at shoul-

¹³ "How to Bowl." American Sports Publishing Company, New York.

der height on the wall surfaces. The padding on the walls should be removable, however, it should also be possible to wash and clean it while in position. A take-down ring may be hung from eyebolts in the wall at one end of the room. It is desirable to provide drying racks for boxing gloves inside of steel cabinets which will lock. Mirrors and punching bags should be a part of the equipment.

The modern up-to-date wrestling room should have at least a two-inch padding on all walls and over the entire floor. The wall padding may consist of mats hung by straps. This type of equipment is removable and more easily cleaned than the usual built-on-the wall type. Floor mats should be made in sizes which are easily handled. At Harvard the mats cover the entire floor and are in turn covered by a specially made rubber mat which is easily kept clean with soap and hot water. One or more large wrestling mats may be provided and covered with a rubber fabric which is easily sterilized.

If a fencing room is available wall racks, padded targets, and mirrors for observing form while practicing the lunge are useful articles of equipment. A floor of cork linoleum, or matting with the fencing lanes painted a different color than the remaining space is recommended.

Summary of Building Standards.—Experience has shown that regardless of the type of physical education building erected there is need for careful planning of size, shape, seating capacity, floors, walls, ceiling, lighting, ventilation and other details.

High-grade maple is still recommended for gymnasium floors. Glazed brick or terra cotta is preferable for gymnasium walls. Cork, tile, or concrete for locker rooms, and tile for shower and toilet rooms. Gymnasium walls should be free from obstructions.

Wood, painted concrete, tile and acoustic plaster in some rooms have all proved satisfactory for ceilings.

There is some question as to the desirability of skylights.

Mechanically operated swinging and louvre type windows are recommended.

Steel lockers of the single type, size 13 x 15 x 72 inches, are recommended for dressing purposes. Size 12 x 15 x 60 inches is also a convenient size.

Double type lockers should be at least 12 x 12 x 33 inches.

Combination locks with emergency master key control are recommended.

From 16 to 25 square feet of floor space per shower is a desirable standard.

There should be one shower for every three to five persons using the showers at the time of maximum load.

It is desirable to have the showers controlled by a thermostatic mixer so that water beyond a certain temperature cannot pass to the shower.

A self-cleaning type of shower head which supplies a stream of varying size and force is preferable.

Boxing and wrestling rooms, specially equipped for those sports should be provided for men students.

Every department should provide a dance studio and one or more rooms for individual corrective physical education.

There should be at least one four-wall handball court and one squash racquet court for every 100 students enrolled in the institution.

Bowling alleys are highly desirable as a part of the college physical education facilities.

Volleyball, indoor baseball, shuffleboard and other indoor courts should be provided.

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CHAPTER XVI

ADMINISTRATION OF SWIMMING POOLS

The Responsibility Involved.—In the preceding chapter attention was directed to the need for standards in design, construction, and maintenance of physical education facilities of all kinds, both indoor and outdoor. The development of these standards is essentially a problem of research for some individual or individuals who have the time, training, and ability for detailed study. While the Committee on Construction and Material Equipment of the College Physical Education Association has made an excellent beginning on physical education buildings other facilities have been somewhat neglected.

Swimming pool design, construction, and maintenance, like the development of other facilities, have been rather haphazard. Until recent years there was a general feeling that swimming pools were little more than large dirty bathtubs. Parents and students frequently objected to a swimming requirement because of the health hazards involved in using the college swimming pool. Physicians presented statistics to show that the incidence of respiratory infections increased tremendously during the indoor swimming season. This so emphasized the responsibility of administering a swimming pool that some directors refused to promote swimming as a part of the physical education program. But the annual reports of the Committee on Curriculum Research¹ placed swimming at the top of the list of activities recommended in a college physical education program. Interest in the administration of pools increased until 1930, when a revised report of the Joint Committee on Swimming Pools and Other Public Bathing Places² was considered authoritative. At present Luehring³ is developing standards in the design, construction, and maintenance of swimming pools which will serve as reliable guides for the adminis-

¹ "Committee on Curriculum Research." *Proceedings, College Physical Education Association, 1929-33.*

² "Swimming Pools and Other Public Bathing Places." *Joint Report, Committee on Bathing Places of the American Public Health Association and the Conference of State Sanitary Engineers. American Public Health Association, New York, 1930.*

³ Luehring, F. W. *Standards for Swimming Pools. Ph.D. Dissertation, Teachers College, Columbia University.*

trator who insists on the most scientific information available in the conduct of his swimming program.

Sanitary requirements are now so stringent that it has become necessary for the administrator or his assistants to know something of chemistry, bacteriology, sanitation, electricity, and a number of other things in combination. Young persons coming into the field, as well as older persons already established, are likely to accept the task of promoting swimming without realizing what great responsibilities are involved.

Standards for Design and Construction.⁴—*Size.*—The minimum size of swimming pools is determined by rules of the National Collegiate Athletic Association.

Pools for championship meets should be at least 60 feet in length, 20 feet in width, and have a water depth of at least 7 feet in the deep end and not less than 3 feet in the shallow end. The maximum height of the take-off for all races should be not more than 18 inches above the surface of the water. In pools of larger size the width should be a multiple of 5 feet. It is acceptable practice to have the length three times the width. Sixty, 75, 90, 105, and 120 feet are standard lengths.

In the design of a pool due allowance must be made for the number of bathers who may be expected at the time of maximum use. In computing the area which must be provided it is recommended by the Joint Committee⁵ that the pool be divided into three zones, and the area of each computed separately. An area extending 10 feet from the extremity of diving board or tower should be considered reserved for divers, and not more than two or three persons should be permitted in the water in this area at one time while diving is in progress. About three times that number may be on the shore or diving platform awaiting their turn to dive. Twelve persons are, therefore, the maximum number which the Committee would permit for the area within a 10 foot radius of each diving board or platform.

Some swimming pool operators believe that the space required by a swimmer might fairly be expressed as five-fourths the square of his height and that, on an average, two-thirds of the swimmers present would be in the pool at the time. On this basis the average space requirement of the adult swimmer is 36 square feet, and assuming that one-third of the swimmers are on shore, an average of 27 square feet should be provided for each swimmer who may be expected to be

⁴ Adapted from Kocher, L. A. and Davison, R. L. "Swimming Pools." *Architectural Record*, Vol. 65, January, 1929, p. 68.

⁵ Joint Report. *Op. cit.*, p. 11.

present at the time of maximum load. The average space allowance for non-swimmers is 10 square feet per bather.

These standards mean that if the pool is already built the size of classes should be such that the average space in the pool provided for each swimmer is 36 square feet, and at least 10 square feet per student for non-swimmers.

Depth.—Minimum depths as covered by the various athletic association rules may be summarized as follows:

For racing, 7 feet at deep end and 3 feet at shallow end.

For water polo, a minimum depth of 6 feet.

For soccer water polo, a minimum depth of 3 feet at shallow end.

While the consensus of opinion of swimming instructors and others⁶ establishes the following as minimum depths for diving from various elevations, there would seem to be some question regarding these standards. Undoubtedly, further study is needed here.

<i>Elevation of Diving Platform</i>	<i>Minimum Safe Depth of Water</i>
1 foot	5 feet
3 feet	6 feet
5 feet	7 feet
7 feet	8 feet
10 feet	9 feet

The slope of the bottom of the pool where the water is less than 6 feet should be gradual. A common standard for this slope provides no more than one foot elevation for fifteen feet horizontal distance. Obviously, in institutions where only one pool is available a shallow end should be provided, where beginners may learn to swim.

Scum Gutters.—Some modifications of the recessed type of scum gutter is used in most of the present-day swimming pools. It has the threefold function of removing scum from the surface of the water, serving as a cuspidor, and furnishing a hand hold or life rail. It is made deep enough so that water splashing into it will not splash out and when used as a hand hold the fingers will not come into contact with any foul water which may be in the bottom. The gutter should provide drain outlets approximately every ten feet. If the runways drain directly into the scum gutter the upper edge of the latter should be set back sufficiently so that there is no possibility of water from the runway draining into the pool. With an improved type of gutter, water from the runways enters it through separate drains provided for this purpose. With still another type of gutter the upper edge has a slight pitch away from the pool to the floor drains. When the

⁶ Joint Report. Op. cit., p. 27.

recessed type is adopted the gutter should be omitted at the ends of the pool as its use here is a source of possible injury to swimmers who are racing.

The open type gutter is favored by some swimming instructors and the Architectural Bureau of the Y.M.C.A. It is the claim of its advocates that it is sanitary and practical with the additional advantage of costing from \$500 to \$700 less for the average size pool. With the open type gutter it is easier for a swimmer to get out of the pool and there is less danger of injury. Some of the swimming experts claim that the open type is the fastest pool because there is no back wash from the gutter.

Scum Board and Non-Slip Racing Bands.—Many pools have a band from six inches to one foot wide of colored tile at the water line to disguise the scum which adheres to the wall. Where the pool is to be used for racing it is desirable to provide at both ends of the pool on the wall surface just below the glazed scum band, a two-foot wide band of non-slip tile as an aid to swimmers in turning.

Pool Markings.—The distance from the deep end should be indicated by numerals in the tile every five feet and intermediate foot units are usually indicated by short vertical lines in the tile. The depth of the water is usually given in foot units along the upper edge of the pool. The pool floor should be divided by lines of dark material of the same kind as the pool lining. The spacing should be five feet or more, as the trend in pool design is toward a lane in excess of five feet. In racing, the swimmer is guided by swimming over, and not between, the guide lines. Some swimming authorities contend that the insertion of colored tile markings for polo and other sports is not advisable, as game rules are subject to frequent changes.

Runways.—It is desirable that the runways on either side of the pool be at least six feet wide and ten to twelve feet wide at the ends. The recommended slope towards the drain is $\frac{1}{4}$ of an inch to the foot. The tendency in surfacing seems to favor an oatmeal or other non-slip surface in variegated light shades.

Walls.—Walls in the pool room should be faced at least five feet high with oatmeal surfaced tile, or with vitreous or glazed brick. The color scheme for swimming pools depends upon several factors. The water in the pool may be one of many shades of blue or green and even yellow, depending on the nature of the water used, the methods of sterilization, the amount and direction of sunlight in the pool, and the reflection from ceiling, walls or pool background. Because of the certainty of scaling the ceiling or walls should not be painted. Where coloring other than the natural color of cement plaster is desired it should be obtained by the use of cement stucco

with mineral coloring. Stuccoes which contain lime or gypsum or vegetable coloring agents are not recommended because of the destructive action of moisture by them.

Ceilings.—The ceiling should be at least 12 feet above the water and care should be taken that no structural beam or truss occurs over the end of the diving board within a maximum diving arc. Certainly 12 feet is not high enough if the diving board is to be elevated to any extent above the water.

Spectators' Gallery.—Permanent seating facilities should be entirely separated from the pool runway by a parapet wall or rail. The bleachers should have an independent entrance and entrance to the pool floor should not be possible. Seating accommodations may arise from the pool level or may be elevated several feet above the runway.

Accessories.—If a *clock* is provided, the Telechron, electrically operated type, with its face flush to the wall and enclosed in a vapor tight case is recommended.⁸ Since *drinking fountains* are not used to any considerable extent by swimmers it is not essential that they be provided in the swimming room. Their location may be in a near-by hallway or dressing room. Concrete or marble *benches* are convenient and desirable if the runway is wide enough to permit their use. Marble or tile urns partially filled with sand are preferable for spittoons.

One or more *diving boards* should be provided in every college pool in conformance with the swimming rules of the National Collegiate Athletic Association.

The "Brandsten Board" has gained wide favor. The height of the board from the water level should be between two feet six inches and four feet. All fittings, except flanges, should be made of malleable iron. Upper flanges should be cast iron standard composition flanges, and all lower flanges, that are set in concrete, should be of brass. Pipes should be galvanized and angular joints should be screwed with full threads. The spring-board of selected vertical one piece straight grain Oregon pine, should be dried out and given two coats of pure boiled linseed oil before it is used. Cocoa matting with additional cross runner at end is a desirable covering for the board.

Poles with hooks and *life rings* should be placed around the pool at accessible points. *First Aid equipment* should also be available for use in case of cuts or other injury.

All doors should be of non-ferrous metal such as copper, brass, or aluminum. Wood doors are unsatisfactory.

⁸ Kocher, L. A. and Davison, R. L. Op. cit., p. 76.

Ladders should be recessed in the walls of the pool, since those that project may cause injury to swimmers. The installation of chromium-plated brass pine hand grips at the top of the ladder is recommended to assist swimmers in climbing out of the pool.

Heat, Light, and Ventilation.—The question of pool and room temperature is still debatable. Water temperature should approximate 72° F. while the air in the pool room should probably be kept at approximately 77° F. with the ventilation system planned to obviate draught on the bathers. Warm air is usually brought in at floor level and, if a fan system is used, the air current is directed over the water. Radiators, with a direct system should be of brass, and enclosed. Iron radiators rust too rapidly and exposed ones are dangerous for swimmers.

Light is important in swimming pool rooms and should receive detailed study. All lights must be provided with vapor proof fixtures and if the ceiling is hung the light fixtures may be recessed, permitting access to fixtures above the ceiling. Provision should be made so that at least one light over the pool may be kept on at all times so that swimmers entering the pool room after hours will not dive into an empty pool. It is essential to install underwater lights from the outside of the pool in such a manner that any leakage which may occur will be carried away and not cause a short circuit. These lights are ordinarily spaced approximately ten feet on centers around the edge of the pool and about one foot below water surface. Care must be taken to prevent any dark spots.

On many of the older pools skylights were often provided because of the assumed sterilizing value of sunlight. This value is largely lost with ordinary glass, but ultraviolet ray glass makes available the benefits of direct sunlight. Where skylights are provided they are now built double with provisions for heating the intervening space to prevent excessive condensation. Sun-bathing by overhead or side windows is a valuable feature of any pool so equipped. Side windows should be double in a northern climate.

If the rooms above the ceiling of the pool are not heated, great care must be taken to obtain proper insulation or heating of space above a lining ceiling in order to prevent condensation, discoloration, and objectionable dripping of condensed moisture into the pool.

Acoustics.—Reverberations are reduced by breaking up the ceiling area with beams. A curved ceiling should be designed by an acoustical expert.⁸ To obtain satisfactory acoustical results the walls as well as ceiling should be treated with a sound absorptive material, and in

⁸ Kocher, L. A. and Davison, R. L. Op. cit., p. 78.

specifying any material the effect of moisture on the material must be understood. Most materials lose their acoustical value if painted or if cleaned by means of a rough brush.

Treatment of Water.—The method recommended^o for the treatment of the water is that it be constantly and continuously drawn from the pool, filtered, sterilized, and returned, with an additional supply of fresh water to make up for that lost. It is evident that if clean water is to be maintained the recirculation system must be designed to provide a turnover ratio of at least two, and that where heavy bathing loads are anticipated, the turnover ratio should be three or more in 24 hours. It is further recommended that the total number of bathers using a swimming pool during any period of time shall not exceed twenty persons for each one thousand gallons of clean water added to the pool during that period. The total number of bathers permitted to use a swimming pool during any period of time shall not exceed seven persons for each one thousand gallons of water in the pool unless the pool shall have been completely disinfected at least once during that period.

Recirculation System.—The recirculation system consists of the pumps, hair-catchers, and filters, pipe connections to the inlets and outlets, the water heater, the chlorinator, and the suction cleaner. Centrifugal pumps, electrically driven, are preferable for swimming pool circulation, although plunger pumps are sometimes used. The recirculation system should include a strainer to prevent hair, lint, etc., from reaching the filters. An efficient type of hair catcher consists of a metal chamber containing a removable cylindrical strainer, so arranged that the water passes through the strainer from the outside. It should be of non-corrosive material with openings not more than three and one-half inches across. A slotted strainer is more easily cleaned than one which is perforated. The area of strained openings should be at least ten times the area of the water inlets. Hair traps should be so constructed that they can be quickly taken down for cleaning by loosening two or three wingnuts. Proper valves should be provided to prevent flow of water through the strainer while cleaning. A heater designed to heat all or a part of the circulation water is recommended as blowing steam directly into the pool or placing heating coils inside the pool as methods which are unsatisfactory.

The most satisfactory method of removing the dirt, hair, etc., settling on the bottom of the pool is by means of a suction cleaner. When a suction cleaner is to be operated by the recirculation pumps, a gate with a graduated stem or other registering device should be provided for

^o Joint Committee Report. Op. cit., pp. 21-22.

throttling the flow from the pool outlet to permit the pump to operate at maximum efficiency when the suction cleaner is in use.¹⁰

The piping system should be properly designed to reduce friction losses to a minimum. It is believed that pipe capacities should generally be at least double the theoretical value. Flange joints or unions should be inserted at intervals to permit any part of the system to be quickly taken down for cleaning or repairs. Openings should be provided for insertion of gauges to permit vacuum or pump suction and pressure at discharge to be determined, should a study of the recirculation system be desirable. It is advisable also to make provisions for insertions of Pitot tubes or meters for checking the actual volume of water passing through the system under working conditions. Outlets should be provided for obtaining samples of the water as it leaves the pool and after filtration for purposes of laboratory tests.

All pools should be provided with an outlet at the deepest point of sufficient size to permit the pool to be completely drained in four hours or less. The opening in the floor of the pool should be at least four times the area of the discharge pipe to reduce suction currents. This opening must be covered with a proper grating.

Sterilization.—The method of sterilization now most frequently recommended by writers and designers is chlorination. There are at least three methods of effecting sterilization by chlorination—calcium hypochlorite, liquid chlorine, and electro-chlorination. The disadvantages of the use of hypochlorite of lime lies in the possibility of carelessness and neglect on the part of the attendant whereas the mechanically operated doses are more certain. It is important that an excessive overdose may be prevented, since excessive chlorine in the water is irritating to the eyes and mucous membrane.

The addition of chlorine either as a gas or as a water solution by use of proper apparatus appears, today, to be the most satisfactory method of pool disinfection.¹¹ This method not only disinfects the entire body of water in the pool but also maintains at all times a residual amount of disinfectant to sterilize immediately any dangerous pollution disseminated by swimmers. With the proper chlorine apparatus it is also possible to increase or diminish the dosage as required to compensate for variations in the bathing load. One objection to the use of chlorine is the chance of accidental escape of gas into the room, but modern chlorine apparatus are carefully designed to prevent such accidents. Chlorinator and tanks are usually installed in a special closet with vents near the floor connecting with the outside of the building.

¹⁰ Joint Committee Report. Op. cit., p. 21.

¹¹ Joint Committee Report. Op. cit., p. 24.

Disinfection with hypochlorites is now considered a makeshift. According to the Committee, the use of ultra-violet ray apparatus alone where the bathing load is high is not recommended. While the data on the use of ozone for pool disinfection are very few and inconclusive, there is no evidence that ozone has any residual sterilizing effect after the water has been treated.

On the other hand, Scott¹² writes of both ultra-violet and ozone as sterilizing agents. Regarding the former he states it has been demonstrated beyond question that these rays will kill germs in water. When this became known steps were taken to employ it in the sterilizing of swimming pool water. In the system as it exists at present the water from the filter is forced in a comparatively thin film past the ultra-violet radiations. Any living organism that falls within the range of these germicidal rays is immediately destroyed. Difficulties, if they occur, he believes are probably due to lack of intelligent control on the part of the operator rather than any shortcomings in the apparatus involved. Fundamentally the treatment of water by ultra-violet is sound.

Ultra-violet has a number of very distinct virtues, the most outstanding of which is that the water is free from any chemical or other agent which may be offensive to a swimmer. The entire trend in this connection is to reduce the use of such disinfectants to a minimum and if possible eventually eliminate chemicals of all kinds in the treatment of water.

Scott further explains¹³ that ozone is formed from the oxygen of the atmosphere. The air is dried and freed from all moisture by being drawn through a dehydrator or air drying plant and is then subjected to the action of electric discharges in a specially constructed generator. The electric discharge acts to add one atom to the normal two in oxygen making three atoms to the molecule.

This third atom of oxygen is quite unstable and impatient to return to its state of equilibrium through chemical action. Since the only reaction of which it is capable is oxidation and since the only substances at hand which can be oxidized are various types of bacteria and organic matter, these things are literally burned up and changed into harmless products.

Although this method of sterilization is considered impractical by many, considerable research is going on and apparently a number of ozonators are now in use which are giving highly satisfactory results. A new method has recently been patented by which the water in the

¹² Scott, C. A. *Essentials of Swimming Pool Sanitation*. Lightner Publishing Corporation, Chicago, 1931.

¹³ *Ibid.*, pp. 66-70.

pool is circulated through the filters every eight hours but treated by ozone in a special system of recirculation once in two hours.

The well-known characteristic of ozone, that is, oxidizing organic compounds, has been utilized in a number of places to destroy locker room odors.¹⁴ An ozone unit, about the size of a cigar box, is connected to the electric light circuit and work is accomplished which is ordinarily done by ventilating flues and suction fans.

Regulations for Bathers.¹⁵

1. In indoor pools, used exclusively for men, nude bathing or undyed cloth swimming trunks should be required.

2. Bathing suits, when used, should be of wool or cotton of simple design and of undyed material or tested for fastness of color.

3. All swimmers, men and women, should be required to wear rubber bathing caps.

4. All suits and towels should be supplied and laundered by the department of physical education.

5. All bathing suits and towels should be washed with soap and boiling water, rinsed, and thoroughly dried each time they are used. Cold water washing and air drying is not recommended.

6. A swimming instructor or other qualified attendant should be on duty at the pool side at all times when the pool is open. Such attendants should have authority to enforce all rules of safety and sanitation.

7. The attendant should be on duty at the shower room and entrance to the pool to inspect all swimmers for skin diseases, open lesions, etc., and insure that a proper cleansing bath has been taken.

8. Swimming pool attendants should be capable swimmers, competent in life-saving methods, and in methods of artificial resuscitation.

9. No student should be permitted to enter the pool room unless an attendant or other competent person is present. Solo bathing should be absolutely prohibited. When the pool is empty, entrance to the pool, except for attendants, should be impossible.

10. All persons using the swimming pool should be required to take a cleansing shower bath in the nude, using warm water and soap, and thoroughly rinsing off all soap suds, before entering the pool room. A bath after donning a bathing suit should not be permitted.

11. A student who leaves the pool room for any reason should take a foot bath before returning.

¹⁴ *Ibid.*

¹⁵ Adapted from

a. Joint Committee Report. Op. cit., pp. 28-30.

b. Abstract of Report of Committee on "Otorhinologic Hygiene of Swimming." Journal American Medical Association, Vol. 85, No. 5, August 1, 1925, p. 357.

12. A student who leaves the pool to use the toilet should be required to use a second cleansing bath before returning.

13. Any person having any skin disease, any considerable area of exposed sub-epidermal tissue, sore or inflamed eyes, a cold, nasal or ear discharges, or any communicable disease should be excluded from the pool.

14. The feet, and especially the toes, of all swimmers should be inspected regularly, and those persons showing infection should be excluded from the pool and dressing rooms and advised to consult a physician or skin specialist.

15. Spitting, spouting of water, blowing the nose, etc., in the pool should be strictly prohibited. Students should be instructed that the scum gutter is provided for expectoration.

16. All students should be instructed that blowing the nose to remove water is likely to force infectious matter into sinus and inner cavities and possibly cause serious consequences.

17. Divers should be advised to use rubber caps over the ears, or to plug the ears with greased cotton to prevent damage to ear drum and passages by water forced by concussion.

18. No boisterous or rough play, except supervised water sports, should be permitted in the pool, on the runways and diving boards, and in dressing or shower rooms.

19. Suitable placards displaying pool regulations and instructions should be conspicuously posted in the pool rooms and the dressing rooms. It is recommended that students be required to memorize the rules for safety and sanitation as a prerequisite to use of the pool.

Regulations for the Swimming Pool Operator.¹⁶

1. The floor of the pool should be cleaned with a vacuum cleaner at least twice weekly. This may be done early in the morning before the pool has been opened for use and after the sediment has been given time to settle to the bottom.

2. The runways of the pool should be swept daily and treated with some type of active germicide.

3. Six inches or more of new water should be pumped into the pool each morning and the surface water allowed to flush over into the scum gutter for about thirty minutes.

4. The water should be recirculated steadily throughout the entire time the pool is in use. Strictly modern plants have the capacity to turn the water completely at least once every eight hours.

¹⁶ Adapted from:

a. Joint Committee Report. Op. cit., pp. 30-33.

b. Scott, C. A. Op. cit., p. 104.

5. The pool operator should be provided with the proper outfit for testing for acidity and alkalinity.

6. Daily alkalinity tests should be made and soda added if the need is indicated.

7. Whenever alum or sulphate of ammonia is used during purification or repurification of swimming pool water, the water should show an alkaline reaction at all times when the pool is in use. The alum pot should be supplied with alum at all times. This should be checked daily.

8. The amount of available or excess chlorine in the water when the pool is in use should not be less than 0.2 p.p.m. or more than 0.5 p.p.m.

9. The pool operator should be provided with the proper outfit for making the orthotolidine test for excess chlorine and with permanent standards showing maximum and minimum chlorine permissible.

10. The pool should be tested for residual chlorine at least twice daily.

11. Bacteriological examination of the swimming pool water should be made daily by health authorities and a report made to the pool operator.

12. Visible dirt on the bottom of the pool and visible scum or floating matters on the surface of the pool should be removed within 24 hours.

13. The water should be sufficiently clear to permit a black disk 6 inches in diameter on a white field, when placed on the bottom of the pool at its deepest point, to be clearly visible from the sidewalks of the pool at all distances up to 10 yards, measured from a line drawn across the pool through the disk.

14. The pressure gauges of the filter should be noted daily and the filter backwashed if necessary.

15. The water in the pool should be heated to a temperature of approximately 72° F.

16. The temperature of the air in the pool room should probably range between 2° F. colder and 8° F. warmer than the water in the pool. This standard needs further study. General practice is to maintain a temperature of about 5° F. above that of the contents of the pool.

17. The pool operator should be supplied with a proper notebook or with blank forms on which he should record every day:

a. The number of persons using the pool.

b. The volume of new water added.

c. The temperature of the water and the air.

- d. The actual time the pumps and filters are in operation.
- e. The time each filter is washed or cleaned.
- f. The time and amount of each chemical used or added.
- g. The time the bottom and the sides of the pool are cleaned.
- h. The results of all acidity, alkalinity, and excess chlorine tests.

Three Simplified Tests for Swimming Pools.¹⁷—Broadhurst has described three simplified tests for swimming pools which are so valuable she is quoted in full. They are the alkalinity, chlorine, and colon bacterium tests.

"1. Alkalinity Test.

This test is based upon the fact that phenolphthalein gives a pink color in the presence of alkali, but is colorless when the medium is acid or neutral.

On one side of a clean white saucer or plate, place three drops of the pool water, and on the opposite half, place three drops of distilled water. To each of these samples add one drop of phenolphthalein solution. This solution is made by dissolving one gm. of phenolphthalein in 100 c.c. of 95 per cent alcohol, and adding enough soda (washing or caustic soda) to maintain a faint but definite pink color, both in the solution itself and also when one drop of it is added to three drops of distilled water. The phenolphthalein solution must be kept corked to prevent evaporation of the alcohol with resulting precipitation of the phenolphthalein.

If the pool water is sufficiently alkaline, the phenolphthalein solution will cause the pool sample to appear slightly pinker than the distilled water sample, or to maintain its pink color a few minutes longer. A much darker color with the pool sample indicates too much alkali.

2. Chlorine Test.

This test is based upon the fact that a green color develops when orthotolidin solution is added to water containing weak solutions of chlorine.

In this test we use a transparent celluloid tube, which has a yellow-green band at the top approximating the yellow-green color which develops when $\frac{1}{2}$ c.c. of orthotolidin solution is added to water containing 0.3 to 0.5 parts of chlorine to a million parts of water (0.3 to 0.5 p.p.m.). The orthotolidin solution is prepared by dissolving one gm. of orthotolidin in one liter of 10 per cent hydrochloric acid.

To determine whether amount of chlorine present falls within the recommended range, the celluloid tube is filled to the base of the yellow-green band with pool water; and $\frac{1}{2}$ c.c. of the orthotolidin solution is added and well mixed by placing the palm over the open end of the tube and inverting the tube several times. The tube may then be allowed to stand one minute, after which the chlorine content may be estimated to be satisfactory or unsatisfactory by comparing the green color of the liquid with the green band above the

¹⁷ Broadhurst, J. L. "Simplified Control of Swimming Pools," Teachers College Record, May, 1931.

liquid. This is best accomplished by placing the tube in a good light, natural or artificial, with a clean white paper as a background. More than 0.5 p.p.m. of chlorine is undesirable, and excessive chlorine would be indicated by a darker green in the liquid. If the color of the liquid is definitely paler than the color band, more chlorine is needed in the pool, especially if the pool has heavy or irregular loads. A complete absence of chlorine calls for immediate action; and, even where chlorine is continuously added by an automatic pump, it may be desirable to add such emergency chlorine "by hand," using chlorinated lime, which may be purchased in blocks or cans.

3. *Colon Bacterium Test.*

This test is based upon the changes produced in special culture media, the formation of gas, and finally, alkali. The gas becomes evident by the displacement of the water, and the alkali turns the red dye used as an indicator in the culture medium, to a yellow color.

The *coli* test utilizes a 10 c.c. tube made of celluloid, as in the chlorine test, to avoid possible accidents due to broken glass. The tube contains a small mass of concentrated food material, favorable for the growth of *coli* organisms when water is added, as described later. The tubes have been sterilized in the autoclave to kill any bacteria in the food and in the enclosed air, and care should be observed to avoid adding bacteria, other than those present in the pool water. For example, the tube may be picked up by the plug and so transferred to the test tube holder, in which it should be held while collecting the pool sample. After filling the tube with the swimming pool water, holding it, as shown, open end up, well below the surface of the pool, the tube is then inverted and lowered into a cup partly filled with pool water, not more than one-half full. If bubbles collect within the next hour or two, it is safe to assume that they represent air carried in with the water, and the tube should be turned upward so as to allow the bubbles to escape, and then again inverted in the cup of water.

The tube should be kept at a warm temperature (30° to 37° C.) in an improvised warm box if no incubator is available. This is easily prepared by enclosing a small electric bulb in a metal box, separating the tubes from the bulb by a piece of tin or any opaque but non-inflammable material to avoid light effects on the colon bacteria.

If in 24 hours or less, the reddish color has changed to yellow, and a fourth of an inch or more of gas has formed, we know that the *coli* organisms are present in relatively large numbers. Less gas, if accompanied by a yellow color, may be considered more as a warning of probably questionable conditions. Bubbles only, especially if not accompanied by a color change, may be ignored, for they may be due to air displaced from the food surface or from the water as described previously.

To complete the *coli* test if gas were formed, the tube would be withdrawn from the water with a finger over the open end to keep the gas in it from escaping, and the presence of carbon dioxide and hydrogen would be separately determined. These determinations, however, are not necessary in these warning tests, for in swimming pools the gas color results described rarely

fail to mean that *coli* organisms have survived the pool conditions and that remedial measures are needed.

Tubes showing gas and color changes may be safely cared for by filling the cup to the top with 2 per cent formalin—1 part of formalin (as purchased) to 20 parts of water—and allowing the disinfectant to act for 4 or 5 hours. If preferred, chlorinated lime may be used, a teaspoonful to a gallon of water. The disinfecting solutions should be renewed weekly.

Tubes showing no color or gas changes are no more dangerous, probably, than the pool water itself, and they may be emptied into the toilet and merely washed with soap and water. It may be well, however, to observe a routine chemical disinfection, as described with formalin, or chlorinated lime. After disinfection, the tubes may be discarded with the refuse, or they may be emptied, washed, and prepared for use again by adding food and sterilizing.

How much alum or soda or chlorine any pool needs depends upon several inconstant and variable factors, such as the amount of dilution or water replacement, the efficiency and operation time of the filters, the number of gallons of water per occupant, 'overloads' at given periods, and failure in any other treatment (e.g., too little alum will necessitate greater chlorine additions for bacterial removal).

Each operator will have to determine for his pool conditions, the average amount of alum, soda, and chlorine needed daily, and stand ready to adjust these, as the preceding tests indicate to be necessary. It may help in beginning the treatment to know that several years of experience with a school pool holding 60,000 gallons show that with preliminary showers required of all bathers and a filter operating all the time the pool is in use, good conditions may be maintained for a daily average of 150 bathers for 45-minute periods each, by using weekly an average of 20 pounds of alum, 10 pounds of soda or lye, and 12 pounds of chlorinated lime. In this pool the alum is fed into the water on the way to the filter. The soda and chlorine are added nightly by dissolving them separately in warm water in a pail and 'dribbling' into the pool from the edges. If tests indicate the need for immediate action during the day a soda or a chlorine 'block,' as needed, may be placed on the floor of the pool, pending the usual correction after the pool is closed for the night; or small amounts may be added at noontime or during any vacant class period by the usual pail methods, stirring the water round about with a flat stick or any convenient clean object, to avoid harmful concentration of the chemical in any region of the pool."

Summary.—State sanitary laws or regulations regarding swimming pool operation are in effect in some thirty states. Some require that the pool administrator register with the state health agency, others require the issuance of permits by the state health agency, and at least two states license swimming pools. Irrespective of the law or the efficiency of the equipment intelligent control on the part of the administrator is essential if the health of students is properly safeguarded.

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CHAPTER XVII

PHYSICAL EDUCATION FIELDS FOR COLLEGES AND UNIVERSITIES

The Need for Standards.—Modern college physical education, in so far as the weather will permit, has moved to the greatest of all gymnasiums, the out-of-doors. The enrichment of the program by the addition of games and sports for the masses of students has made new demands for suitable play space. A tremendous amount of time and thought has been given to the construction and care of athletic fields for varsity contests but very little has been said or written about the orientation, construction and economical arrangement of play fields for the required, intramural, and recreational programs.

What standards are available to assist in determining the amount of play space needed by a college of one thousand students or a university of ten thousand students? Can these standards be stated in terms of square feet per student, in square feet per activity, or on some other bases? How provide the greatest number and variety of play fields without interference, and with the least waste of space? Hadden¹ writes as follows:

"Experience has shown that careful and intelligent replanning may result in a saving of as much as ten to twenty-five per cent of the total ground area devoted to a given number of facilities on a given area, and it is obvious that where land is valuable such a saving makes a large amount of study in design worth while."

The design of playgrounds for small children is a comparatively simple task. Slides, swings, and trapezes can be fitted into areas of various sizes and levels. On the other hand, the planning of play fields for college students is quite complicated. Speedball, tennis, golf, playgroundball, touch football, soccer, track, and baseball are sports which vary in their requirements from very extensive areas of level ground in single units to small areas of level ground in separate units. Every college or university, like any other community, has its own individuality so that no standard system of planning can be designed

¹ Hadden, Gavin. "Athletic Facilities to Meet Modern Needs in Towns and Cities." *The American Magazine*, May, 1926.

which would effectively meet the needs of every institution of higher learning in the country. We may standardize games and sports, the size of play areas, and the physical equipment needed, yet the planning of out-door play space must be adapted to local needs and is conditioned by natural resources, topography, climate, and the financial outlay required.

Guiding Principles in Planning Play Fields.—In many colleges and universities play fields have been developed, if at all, in a hit or miss fashion. The gridiron, diamond, and track usually came first. Ideally, of course, the college site should be selected in the beginning with a well defined plan for campus development and building arrangement. Three decades ago very little thought was given to the location of the gymnasium or athletic fields. Topography, soil composition, or distance from the center of student life were not determining factors. It is a well-known fact that the farther an individual lives from a playground the less he uses it.

Schott² found the available play spaces, as represented in the colleges he studied, varied from five to six acres. This is not sufficient space for the development of a complete program of physical education, yet in many instances, the colleges were not making full use of the space available.

Certain rules or principles should guide in the selection and development of play fields:

1. Plan from ten to twenty years in advance.
2. Choose level land, if possible, because all standard games and sports, with the exception of golf, require level playing fields.
3. Provide play space for all students, men and women, athletes and non-athletes. Athletics for all is becoming the rule in every progressive institution.
4. Provide play fields which are attractive, and well kept.
5. Arrange fields for the most economical use of space. Avoid over-lappings. Use fences, walls, benches, and posts judiciously. The plan should be flexible enough to provide for seasonal games, as illustrated in the drawing on page 325.

Standards for Outdoor Facilities.—There is great need at present for the development of suitable standards for out-of-door play facilities in schools and colleges. As stated in a preceding chapter, the chairman of the Committee on Construction and Material Equipment of the College Physical Education Association, reported in 1924 an out-

² Schott, C. P. *Physical Education in the Colleges of the United Lutheran Church in America*. Bureau of Publications, Teachers College, Columbia University, New York, 1929, p. 21.

line for a pamphlet on "Playing Fields" which has never been completed. Certain tentative standards have been proposed,^{3, 4} but a more accurate and complete list should be determined. This is essentially a problem of research for certain individuals who have the time and ability to study the problem in detail. The following list is merely suggestive.

1. Every college regardless of size should provide at least ten acres of outdoor play space.
2. Colleges and universities should attempt to provide one acre of play space for every fifty to seventy-five students enrolled.

Enrollment	Acres of Play Space	Enrollment	Acres of Play Space
350	10+	1200	20
500	10+	1500	25
750	12	2000	33
1000	15	3000	50

3. The institution should provide at least one tennis court for every fifty to seventy-five students enrolled.

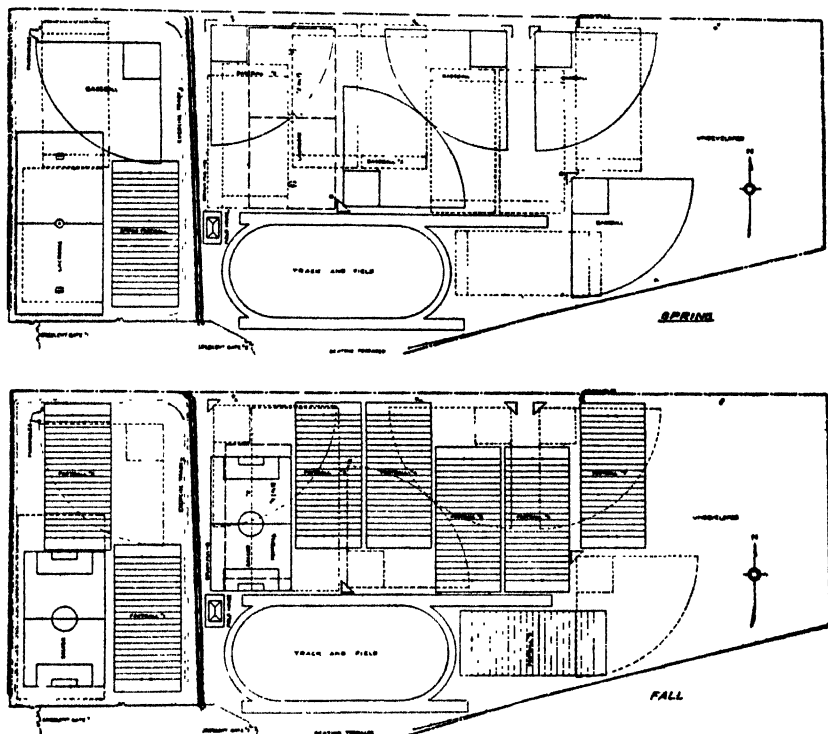
Enrollment	Tennis Courts	Enrollment	Tennis Courts
350	6	1200	20
500	8	1500	25
750	12	2000	33
1000	16	3000	50

4. There should be a golf course, publicly, privately, or institutionally owned, available for student use at minimum cost, at every college and university.
5. Every institution should provide at least one quarter mile cinder track with suitable runways and pits for field events.
6. Every institution should provide, in addition to varsity facilities, a minimum of four or five separate play fields suitable for touch football, speedball, soccer, and field hockey in the fall, and baseball, playground ball, soccer, and lacrosse in the spring.
7. Every institution should provide separate outdoor play fields for men and women.
8. All outdoor play facilities should be located within convenient walking distance of the campus.

³ Hadden, Gavin. "Outdoor Athletic Facilities at School and University." The American School and University, American School Publishing Co., New York, 1928, p. 172.

⁴ Hughes, W. L. The Administration of Health and Physical Education for Men in Colleges and Universities. Bureau of Publications, Teachers College, Columbia University, N. Y., 1932, pp. 78-79.

Designs of Play Fields.—Hadden ⁵ has shown outstanding ingenuity in designing play fields for schools and colleges. Naturally his projects have differed widely in design because of differences in shapes of areas, topography, wishes of owners, and the nature of the athletic program. The plans shown on page 326 were designed primarily for football, baseball, and an auxiliary 220 yard running track. The arrangement of gridirons and diamonds is such that no football



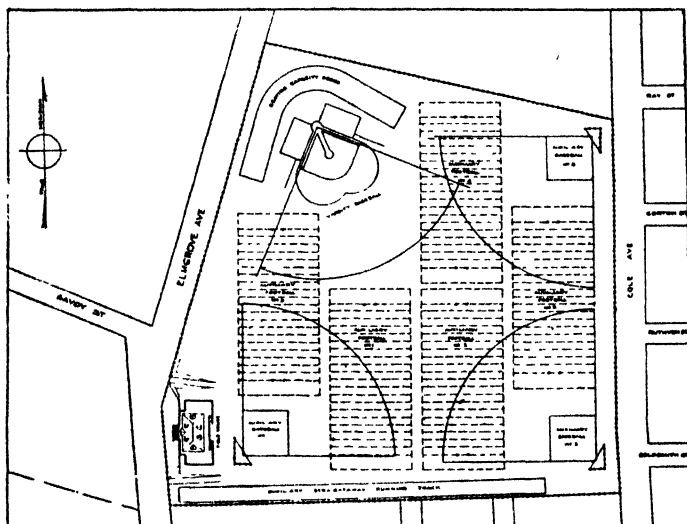
A PLAN OF ATHLETIC FIELDS FOR A UNIVERSITY.

Note the flexibility and variety of fields provided, the small amount of space unused, infields free from other facilities, etc. (Courtesy of Gavin Hadden.)

field encroaches on any part of the infield of a diamond. This greatly simplifies the problem of maintenance. It should also be noted that the arrangement provides great flexibility in that all four diamonds, or five gridirons, or some of the diamonds and some of the gridirons may be used simultaneously. The baseball diamonds have been designed for a "hooded" type of backstop which conserves valuable space, and prevents many injuries. It is erected in "two vertical wings form-

⁵ Hadden, Gavin. "Athletic Facilities to Meet Modern Needs." Op. cit.

ing a right angle a short distance behind the home plate, with a horizontal triangular hood of wire fabric supported above.”⁶ The plan on page 325 is divided into two parts by the topography of the site. This field was designed for minor games and for practice purposes only. One plan indicates the facilities available in the spring playing season while the other shows the fields available during the fall. The small amount of ground unused, the great flexibility and



THE PLAN OF ALDRICH FIELD, BROWN UNIVERSITY.
(Courtesy of Gavin Hadden.)

variety of facilities provided, the manner in which baseball infields have been kept clear of other facilities, and the “hooded” backstops for the baseball diamonds, should be particularly noted. It is possible, of course, to arrange a great number of alternate methods of use for play fields so that plans, in so far as they can be predicted, can be developed which seem to meet the requirements of any given college or university.

Construction of Fields and Courts.—Progressive physical educators are constantly seeking new and better methods of constructing and maintaining outdoor facilities. What is the best type of hard surface tennis court? What proportion of cinders, clay, and loam produces the best running track? How should the play fields be surfaced? These and many other similar questions await extended experimentation before complete answers can be given.

⁶ Hadden, Gavin. Op. cit., p. 3.

Archery.—Archery is a common activity among women students and has proved popular with the men where it has been given a trial. A narrow space about 150 yards long is needed for all the standard distances. The width of this area depends upon the number of targets used, and factors like the distance to the target and the nature and use of the adjoining areas. The court should be level and the ground for twenty-five to fifty feet in front and behind the target should be free from stones or other hard substances which damage arrows. A hillside, bunker, or bales of straw behind the targets, and a fence or sign around the court all make for safety. Cross-court winds should be avoided, if possible.

The common distances are 30, 40, 50, 60, 70, 80, and 100 yards. Targets are usually made of rye straw, bound into four-inch rope, and sewed into a flat disk four feet in diameter. The canvas or oil cloth covering is marked with a gold center 9.6 inches in diameter, and colored, concentric, 4.8 inch bands of red, blue, black, and white from center to edge. Values are: gold 9, red 7, blue 5, black 3, and white 1. Three pieces of wood six feet long form a tripod upon which the target is mounted. The target should incline backward somewhat in order to receive the arrows as nearly perpendicular to its surface as possible.

Clock Golf.—This game requires a comparatively small space twenty-five to thirty feet in diameter. A circle is marked on the grass or ground and is divided into twelve equal parts. Points on the circle are determined by pressing a metal plate into the ground and numbering them from one to twelve. The putting hole should be four inches in diameter and four inches deep. It may be placed at any spot between the center of the circle and the circumference so that distances from each point on the circle to the cup will differ in length. Putters and golf balls are the only equipment needed. It is surprising the appeal this has for college students.

Field Hockey.—The length of a hockey field varies from seventy-five to one hundred yards and the width from fifty to sixty yards. Areas may be reduced for intramural games and required physical education classes. The surface should be open, level, well drained, and covered with sod. Ideally, of course this field should be tiled, turfed, and drained like intercollegiate facilities.

The field is divided into four equal parts by lines marked parallel to the goal lines. Five yard lines are marked inside the field and parallel to the side lines. The semicircular area in front of the goals are formed by two quarter circles and a common tangent twelve feet long. The quarter circles are drawn with a fifteen foot radius with the base of each goal upright as the center. Goals consist of two

posts seven feet high (inside measurement) and twelve feet apart and connected at the top with a horizontal bar.

Handball Courts.—The American game of handball, which requires only one wall, is played extensively in city public play areas and is well suited to outdoor play in college and university. The wall is usually made of wood and should be twenty feet wide and at least ten feet high. A wire extension at the top will prevent balls from going over the wall. Surfaces may be wood, asphalt, concrete or bare earth and the dimensions should be about twenty by thirty-five feet.*

Horseshoes.—Level ground is needed so that stakes may be driven forty feet apart for men and thirty feet for women. Stakes should be iron, one inch in diameter, ten inches above the ground, and inclined two inches toward the opposite stake. The pitcher's box, which extends three feet to the front, rear, and side of the stake, should be outlined by 2" x 8" wooden sides sunk flush with the surface of the ground. This box should be filled with clay, which has been thoroughly tamped while moderately wet.

Stake holders may be purchased or built of 4" x 4" oak pieces about 2½ feet long and laid in the shape of a cross. Allowance must be made for the two inch tilt of the stake. Strips of 1/8" x 2" iron fastened to the wooden edges of the pitcher's box will prevent splintering.

Paddle Tennis.—This game has become quite popular because of the small space required to play it. The court is similar to a regular tennis court, except that all dimensions are halved. The playing area is 18 x 39 feet, one fourth the area of a regular tennis court. The net should be 28 inches at the posts and 26 inches at the center.

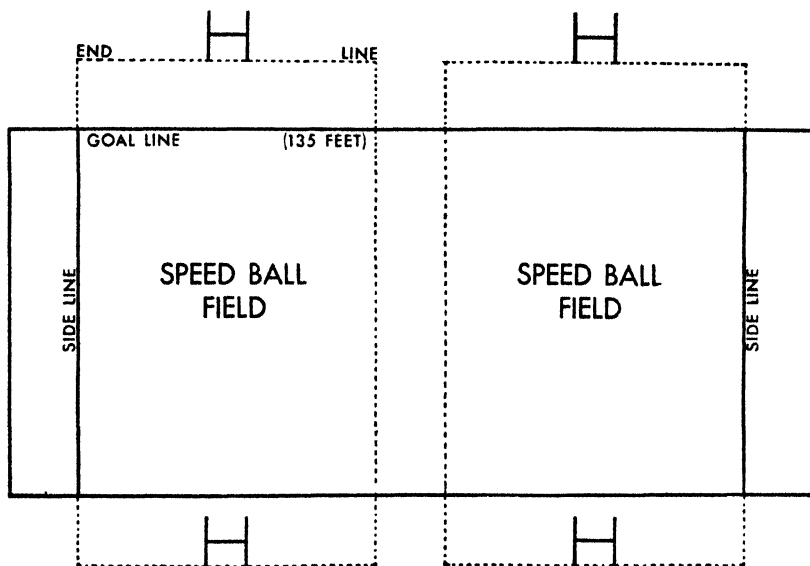
Playground or Soft Ball.—In March, 1934, the Joint Rules Committee, made up of representatives of public recreation departments, the National Young Men's Christian Association, the American Physical Education Association, and the National Recreation Association, took important steps to standardize rules for the game of playground ball or "Soft Ball." The following rules were adopted:

1. Both the 45 and 60 foot base lines are considered official with the committee recommending the adoption and use of the 45 foot distance.
2. The smooth seam, 12 inch ball, weighing from 6 to 6¾ ounces is the official ball for both the 45 and 60 foot diamonds. (The 14 inch ball is approved for use in small areas.)

* See dimensions and markings for indoor courts. Chapter XV.

3. The back line at the middle of the pitcher's plate will be 37 feet $8\frac{1}{2}$ inches from the most distant corner of home plate.
4. Gloves may be worn by any players.
5. Shoes with metal spikes are prohibited.
6. Base-runners must not leave their bases until a pitched ball has reached or passed the batsman.
7. Bunting or attempting to bunt is prohibited.
8. The essential elements of a legal pitch are also defined.
9. The name most commonly and generally used the one recommended by the committee is "Soft Ball."

Soccer.—Soccer fields vary from 120 to 130 yards in length and from 50 to 100 yards in width. Fields should be laid out north and south and tiled and turfed if at all possible.



SPEEDBALL FIELDS PLACED CROSSWISE OF THE FOOTBALL FIELD.

Speedball.—For the average intramural game and for contests among women the 70 to 80 yard field is recommended. The use of an entire football or soccer field seems a needless waste of playground unless abundant space is available. Where the regulation football or soccer fields are used interchangeably with speedball the football or soccer goal posts are recommended. Shorter fields or cross fields provided with movable goal posts on wheels are usually more satisfactory. The fact that speedball lends itself readily to different types of play-

ing fields is a strong point in its favor as an intramural or required physical education activity for men and women. In fact, it is one of the most popular fall sports in the Middle West and certain other sections of the country. The diagram shows two fields where otherwise only one would be available.* This gives a play area from 70 to 80 yards long, which reduces the amount of running and lessens the endurance requirement.

Touch Football.—A committee on the standardization of touch football rules was appointed by the College Physical Education Association in 1932. An analysis of 38 sets of rules revealed that 21 institutions used the regulation football field for touch football, 4 colleges had no set dimensions, in two instances fields were 80 x 40 yards, in two cases the size was 70 x 40 yards, and in one institution the maximum was 75 x 50 yards with a minimum of 50 x 40 yards. The size of the fields in the other colleges and universities depended upon facilities.⁷

The size of the field recommended by the committee is: maximum 360 x 160 feet; minimum 240 x 120 feet. These dimensions include the end zones. The field should be zoned into strips of 20 yards each.

Tennis Courts.—Tennis ranks second on the list of activities proposed for college men⁸ and first among the activities offered by seventy-eight colleges for women as revealed in a study by Barr.⁹ With the greatly increased interest in tennis in the past few years and its expansion from a mere recreational sport to an important activity in the college physical education program the demand for more and better courts has become very general. Lack of standardization in the proper grading and construction of playing surfaces has been a decided handicap. Directors of physical education in the colleges need the best available information regarding desirable methods of installing, for large numbers of students, tennis courts which will give a reasonable service and at the same time be inexpensive. There are many types of surfaces for tennis courts. Some of the common examples are dirt, clay, stonedust, grass, and the hard surface courts made of concrete, asphalt, macadam, tarvia-lithic, German "Colas," Browne's Velvet, and board surfaces.

* Devised by W. L. Johnson, former Director of Athletics, Manitowoc, Wisconsin. American Sports Publishing Company, New York, 1931.

⁷ "Report of the Committee on the Standardization of Touch Football Rules." Proceedings, College Physical Education Association, 1933.

⁸ LaPorte, W. R. and Others. "Report of the Committee on Curriculum Research." Proceedings, Society of Directors of Physical Education in Colleges, 1929, 1930, 1931.

⁹ Barr, Margaret C. "Résumé of the Physical Education Activity Program in Colleges for Women." Research Quarterly, October, 1930.

Orientation.—Tennis courts should be constructed with the long axis extending north and south. This arrangement protects the eyes of the players from the direct rays of the late afternoon sun,—an important consideration in view of the extensive use made of college tennis courts at a time of day when the sun is getting low.

Size.—The total area is 120 x 60 feet. The doubles courts is 78 x 36 feet.

Surface Grading.—¹⁰

Type A.—*End to End Pitch.* Level from side to side and slopes uniformly a total of four inches from end to end.

Type B.—*Pitch from Net.* Level from side to side and slopes uniformly two inches from the net to each base line.

Type C.—*Pitch to Net.* Level from side to side and slopes uniformly two inches from each base line to the net.

Type D.—*Gable Roof Type.* Level from end to end and slopes uniformly one and one half inches from the longitudinal axis to the outer side lines of the doubles court.

Type E.—*Hip Roof Type.* The half court line, or line dividing the service courts, is carried level from service line to service line and the entire perimeter of the doubles court is level and one inch lower.

Taylor recommends Type D for courts constructed alone and Type A for courts constructed in batteries.

Dirt Courts.—In institutions where soil conditions permit, inexpensive dirt courts should be provided until such time as funds are available for better surfaces. It should be pointed out, however, that the life of dirt courts is shorter and the upkeep expense is greater than is true with well built courts. If a solid well drained subsoil exists, courts may be built without going to the expense of putting in foundation material. The following suggestions apply where a filling is to be made:

1. Remove all top soil from the court to eliminate all stones, wood, weeds, roots, seeds, and other undesirable materials.
2. Fill in the subgrade.
3. Pack the fill by watering and rolling and allow to settle during the winter.
4. Bring the subsoil to the same slope as that intended for the finished court. (See the types of surface grading listed above.)

¹⁰ Taylor, A. D. "Grading Plans for Hard Surface Tennis Courts. How to Build a Tennis Court." American Sports Publishing Company, 1933, p. 13.

5. Cover the fill with a mixture of clay, sand, and salt of approximately two inches in thickness.
6. Rake and roughen the subsoil before applying the top soil.
7. Wet and roll the covering layer on several successive days.
8. Remove all inequalities, and thoroughly mix and bind the clay, sand, and salt with a garden rake.
9. Surround the court with trenches sloping toward a general outlet.
10. Avoid shades and shadows as sunlight is essential on dirt courts.
11. Wet, roll, and brush the court frequently.
12. Sweep the court with bass stable brushes. Four fourteen-inch bass stable brushes nailed end to end to a joist make an excellent device for the maintenance of tennis courts.
13. Add sand sparingly. Loose sand causes players to slip and slide and the ball to bounce badly.
14. Wet the courts frequently when the weather is dry.
15. Fill depressions with screened clay.
16. Scrape the clay to eliminate pebbles and gravel grit.
17. Brush and roll the courts lengthwise. Pull the brush in order to eliminate footsteps.
18. Avoid cross court rolling. Light rollers are more desirable than heavy rollers.
19. Calcium chloride is recommended as an additional treatment for playing surfaces. It attracts moisture at night, binds surface materials together, and darkens the surface enough to prevent glare. Salt or ground limestone may also be used.
20. Mark the courts with lump whiting which is not too thick or calcimine in water.
21. The net should be three feet high at the center and three and one-half feet at the net posts.
22. Net posts should be three feet outside the side lines.

Clay Courts.—The following suggestions have to do with clay court construction and care.

1. Remove all top soil and soft earth to a depth of one foot.
2. Fill in the subgrade so that it conforms to the grade of the finished surface.
3. Water and roll separately with a four ton roller about every four inches of fill added to the subgrade.
4. Lay four inch tile, at least twelve inches below the subgrade,

in parallel lines approximately 10 feet apart and at right angles to the direction of the slope.

5. Provide a slope for the tile of about one-fourth of an inch to the foot.
6. Spread approximately five inches of cinders on the subgrade, roll with a light (400 pound) roller, remove inequalities, wet the cinders, and roll with a heavy (four ton) roller.
7. Cover the cinders with a three inch layer of coarse gravel, slag, or crushed limestone, roll with a light (400 pound) roller, remove inequalities, thoroughly wet the material, and roll with a heavy (four ton) roller.
8. Spread about three inches of natural stiff clay, which contains no loam or organic material, over the surface.
9. Use fine sand which will pass through a one-eighth inch mesh, rather than gravel since the latter tends to work toward the surface due to frost action.
10. Mix approximately one part of common salt by weight to forty or fifty parts of surface material.
11. The proportion of sand and clay is best determined by experimentation. "A recent analysis¹¹ of samples taken from a number of courts where ideal playing surfaces exist seems to indicate that an equal proportion by WEIGHT of sand, pure clay, and silt make the best playing surface. Samples of natural clay soil suitable for tennis court surfacing show an analysis ranging from 25 per cent to 35 per cent of silt and from 65 per cent to 75 per cent of pure clay, with no sand or organic matter. . . . Since sand weighs one third more than clay it would be necessary to use one-third more of clay than of sand by volume. Silt, which is very similar to clay but not possessing the binding qualities, has the same approximate weight as clay for equal volume."
12. The surface of clay should be approximately one inch thick when rolled.
13. Water should be applied in a fine spray and the surface rolled with four or five hundred pound rollers.

Stone Dust Courts.—Stone dust tennis courts are not recommended because the sources of supply are extremely limited and courts constructed of this material require constant attention to insure satisfactory playing conditions.

¹¹ Taylor, A. D. "Construction of Clay Tennis Courts. How to Make a Tennis Court." American Sports Publishing Company, New York, 1931, p. 9.

Grass Courts.—Grass courts are not considered desirable for general use in colleges.

Concrete Courts.—Some individuals with long experience in providing various types of tennis courts for college students believe that over a long period of time concrete tennis courts are the most economical and most satisfactory court that can be built. True the original cost is high but it should be remembered that there will be no future expense for rolling, or marking of courts. If concrete courts are to be provided they should be built by some one who knows how. This type of court is especially desirable for varsity competition but in most institutions the cost is too great to provide sufficient courts for the great mass of students in required, recreational, and intramural activities.

Asphalt Courts.—Asphalt courts are even more expensive than concrete. Moreover, players encounter difficulty in adapting the style of play from asphalt to clay, turf, or concrete.

Macadam Courts.—This type of surface differs from any hard surface court only in the construction of the playing surface which is composed of a two inch layer of a mixture of trap rock screenings and pulverized limestone, compacted by rolling and bound together by water.

Certain advantages are claimed for this type of tennis court construction:

1. The color of the surface is dark and the glare of the sunlight is eliminated.
2. The friction of the court is excellent.
3. The surface dries immediately following a rain.
4. This surface is adapted to northern climates.

One great disadvantage is the large amount of maintenance required of the average court.

Tarvia-lithic Courts.—Tarvia-lithic is a combination of mineral aggregate and special tarvia-lithic binder. This surface is black, resilient, non-skid which requires little attention after construction. These courts do not soften in hot weather and the markings hold well. Two objections, however, are that tarvia-lithic courts radiate heat excessively during hot weather, and soil white balls to some extent.

Board Tennis Courts.—Board courts * are recommended by some as the solution to the problem of hard surface tennis court construction. The surface dries readily after a rain, the boards offer some

* Board Courts have been in use for several years at Princeton University.

resiliency and after the initial cost the upkeep is negligible. However, the initial cost is too great to permit any wholesale construction of this type. Furthermore, some players object to board surfaces because they are faster than concrete or asphalt and less time is permitted for the stroke. After the ground is leveled a layer of several inches of cinders should be provided to absorb the water, prevent the washing out of the soil, and eliminate the growth of weeds. Most board courts are built above the surrounding ground.

Colas Courts.—The Colas court, a German development, appears to be an excellent court. It wears well and the greatest objection is that it is slightly slippery due to the granular green colored surface. Apparently there is little choice between tarvia-lithic and Colas courts.

Browne's Velvet Surface.—The advocates of this type of material claim all the advantages usually advanced for other hard surfaces but with the additional feature of low cost of construction. There is some question, however, about the desirability of this surface particularly in northern sections of the country. At the University of Rochester, for example, these courts have been a total failure, while both the Colas and tarvia-lithic courts are quite satisfactory with little to choose between them.¹²

Laykold Courts.—"Cold" asphalt surfaces are quite popular on the Pacific coast, particularly at Stanford University. The material called "Laykold" or "Bitumuls" is procurable in most localities by one name or other. Specifications follow:

1. A rolled subgrade to which a weed killer is applied.
2. A 4 inch crushed rock sub-base, rolled and rerolled.
3. A 2 inch "Laykold" base consisting of "Laykold" and rock mixed in a concrete machine for 1½ minutes.
4. A one-half inch "Laykold" wearing surface consisting of "Laykold" and bird's eye rock mixed as in (3) above and then trowelled to a smooth surface.
5. A seal coat wash of "Laykold." This wash should be re-applied every four or five years.

Costs of Tennis Courts.—Accurate cost data are not available and recommendations are impossible, however, a recent study¹³ indicates what has been spent for the surfacing of tennis courts in certain cities.

¹² Letter from Dr. Edwin Fauver, Director, November 8, 1933.

¹³ Committee Report "Surfacing Playground Areas." National Recreation Association, 315 Fourth Avenue, New York City. A. S. Barnes and Company, New York.

For complete costs and specifications the detailed report of the Committee should be studied.

Types of Surface	City	Cost per Court
1. Bituminous (on Concrete Base)	Cincinnati, Ohio	\$3000 per court. (This price represents total cost including fence, gates, posts, etc., in battery of four.)
2. Colas	Union County, N. J.	\$1575.69 per court.
3. Tarvia-lithic	Union County, N. J.	\$1560.81 per court. (These figures are based on total costs of laying a battery of four courts, two of each type and they include fencing and equipment costs.)
4. Concrete	a. Pasadena, Calif.	A standard size court with a chain link fence costs approximately \$1500.
	b. Minneapolis, Minn. 1927	Four courts with backstops cost approximately \$6000 or \$1500 per court.
	c. Detroit, Michigan	\$1350 (approximately).
5. "Har-tru"	New York	One court \$1450, plus two adjacent courts \$2550, approximately \$1000 per court for excavation and preparation of the base.
6. Kyrock	Detroit, Michigan	\$1450 (approximately).
7. Flex-I-Dry	Springfield, Mass.	Cost of materials is \$450 per court with supervision for building where two or more courts are constructed at one time. Expense for cinders, labor, and drainage are not included. Total cost may run up to \$1500 per court.
8. Westphalt	Detroit, Michigan	\$1350 (approximately).
9. Cut-Back Asphalt or Tarvia	Rockford, Illinois	\$1000 to \$1200 per court.
10. Sheet Asphalt	Detroit, Michigan	\$910 to \$1100 (approximately).
11. Asphalt - Penetration Oil	Pasadena, Calif.	\$700 (approximately), with a standard size court and a chain link fence.
12. Sawdust Cushion	Tampa, Florida—1928	\$350 to \$400 per court (two courts).

Football, Baseball, and Track Facilities.—Information may be found elsewhere¹⁴ for the construction of varsity facilities. It is desirable to maintain the same high standards in constructing permanent intramural and required physical education play fields.

¹⁴ Williams, J. F. and Hughes, W. L. *Athletics in Education*. W. B. Saunders Company, Philadelphia, 1930. Ch. XII.

Gridiron.—If a choice is possible gridirons should be constructed with their long sides running north and south, dirt should be removed for at least two feet in depth, three-inch farm tile should be laid, and this in turn should be covered with rough fill: 8 to 10 inches of sub-soil; a one-inch layer of salt, cinder, and fertilizer; a four-inch layer of top soil and sand; and finally by two inches of sod. If the fields are to be seeded they should be rough graded to within two inches of the correct height. About two inches of top soil is recommended since a greater depth may cause leg weariness, and a soil so porous that it will not properly drain the ground should be harrowed, with spring tooth or disk harrows, to a depth of $2\frac{1}{2}$ to 3 inches until the soils are well mixed, and then rolled with a $1\frac{1}{2}$ to 3 ton roller. Fertilizer should be applied and mixed thoroughly with the soil.*

About $\frac{1}{2}$ inch of loose soil, prepared by hand raking to eliminate the low and soft spots, is all that is needed for seeding.

Track.—The quarter-mile cinder track should be a true semi-circle measuring 30 feet in width on the straightway and from 18 to 24 feet wide elsewhere. A concrete curb measuring four inches wide, 4 to 6 inches high, and extending below the frost line is recommended. About 3 layers of cinders from 15 to 40 inches in depth are usually most satisfactory, a coarse layer consisting of 6 to 10 inches of rubble stone or clinkers, a 6 to 15 inch middle layer of coarse grade straight run cinders but without heavy clinkers, and a top dressing of front end finely screened cinders mixed with clay, black loam, or coal ashes. "Top dressing should be screened through a one-quarter inch mesh. The binder used will depend upon weather conditions and peculiarities of the soil and the mixture should range from 3 to 4 parts of cinders to one of clay or loam. In mixing the cinders with clay or loam the latter should be added sparingly. It is easy enough to add more clay by raking it in, but it is difficult to eliminate it after it is once put down."¹⁵ Drainage pipes should be built into the cement curb so the screened openings face toward the track and catch excess surface water. Tile drains should be laid similar to those under the gridiron.

Constant care is necessary to keep the best built tracks in condition. Redressing each year with fine cinders is essential and the clay or loam which washes down should be replaced. Cinder tracks should be watered, dragged, and rolled almost daily, since the liveliness and fastness of the track depends largely on moisture content, firmness, and smoothness.

* The fertilizer formula, the amount which should be applied, and detailed information regarding seeding, may be obtained from the State Agricultural Station.

¹⁵ Williams, J. F. and Hughes, W. L. Op. cit., p. 245.

Diamond.—Baseball diamonds should be placed with the home plate in the southwest or northwest corners of the playing area with the southeast and northeast corners ranking next in terms of desirability. Ideally, this field should be tiled and drained in a manner similar to that proposed for tracks and gridirons. Grass infield should be watered daily. The skinned portion of the diamond should be kept in condition by sprinkling in the evening or early morning and then it should be dragged and rolled with a gasoline roller. This prevents caking of the soil and leaves a fine dust mulch so essential to insure an accurate and uniform bound of the ball.

Space Requirement Per Player of Outdoor Games.—Outdoor games and sports vary widely in the amount of space required per player. While the worth of a game or sport should not be judged by the size of its playfield; space requirement is, nevertheless, very likely to be a determining factor in the selection or rejection of an activity for a college program. Baseball, for example, probably would be far more extensively played in institutions of higher learning if the space requirement per player were not prohibitive for the mass of students.

The following table¹⁶ indicates roughly the space requirements in square feet per player of some of the common outdoor sports.

Sport	Square Feet Per Player
Baseball	5,417
Lacrosse	5,208
Football	3,436
Soccer	3,436
Field Hockey	2,700
Tennis	1,800
Speedball	1,745
Playground Ball	1,125
Basketball (Outdoor for Men).....	600
Basketball (Outdoor for Women).....	416
Handball (Outdoor—one wall).....	400
Volleyball	333
Croquet	225
Horseshoes	125
Clock Golf	88

Surfacing Playfields.—The problem of adequate surfacing of play areas is one which is still in need of accurate and extended research and experimentation. While it is quite generally agreed that turf

¹⁶ Adapted from *Play Areas* by the Playground and Recreation Association of America. A. S. Barnes and Company, 1928, p. 73.

is the ideal surface for most of the highly organized games of youths and adults it is not always practicable to maintain turf areas on intensively used playfields of less than two or three acres. Maintenance is too expensive, and often impossible. Moreover, grass is not suitable for use when wet or thawing. It does not seem unreasonable, therefore, to presume that colleges will follow the lead of the public schools in surfacing a part of the play area with materials which permit play under all weather conditions. The merits and costs of various types of surfacing have been admirably stated in a recent committee report.¹⁷ Turf, sand-clay, clay, loam, agricultural slag, limestone, screenings, limestone and gravel, rock screenings, sawdust, asphalt and sawdust, cork asphalt, concrete, and others are discussed in detail, but no specific recommendations are made because of the diver-

Types of Surface	City	Cost
1. Bituminous (on concrete base)	Cincinnati, Ohio	\$3.10 per square yard.
2. Limestone Gravel	Cincinnati, Ohio	\$2.97 per square yard.
3. Cork Asphalt	Brookline, Mass.	On job from 300 to 2000 square yards from \$2.50 to \$3.00 per square yard. The cost of surfacing itself (1-in. thick) about \$1.50 per square yard.
4. Cushion Surface	Indianapolis, Ind.	\$1.35 per square yard.
5. Colas	Union County, N. J. Bronxville, N. Y.	\$1.31 per square yard. The average installation would run about \$2.10 per square yard.
6. Tarvia-lithic	Union County, N. J. Newark, N. J.	\$1.29 per square yard. \$1.33 per square yard.
7. Kyrock	Harrisburg, Pa.	\$1.15 to \$1.25 per square yard.
8. Cinder Mix	Des Moines, Iowa	"For purposes of estimation I would say that \$.80 to \$1.00 per square yard would cover all costs of grading and surfacing."
9. Top Soil	Cincinnati, Ohio	\$.80 per square yard.
10. Sawdust Cushion	Tampa, Florida	\$.74 per square yard (using dep't labor).
11. Slag Screening	Cleveland, Ohio	\$.72 to \$1.20 per square yard.
12. Rock Screening	Wilkes-Barre, Pa.	The finished surface including hauling, spreading, sprinkling and rolling—\$.27 to \$.30 per square yard.

¹⁷ Committee Report. "Surfacing Playground Areas." Op. cit.

gent opinions regarding relative merits of surfaces, the lack of complete experimentation, and the inadequate cost data available.

Costs.—Cost data presented by the committee cannot be used as definite guides to local surfacing costs because of the different scales of local prices of materials, labor costs, soil conditions affecting costs of excavation, and amount of subsurface required. On the other hand, the lists of costs above merely indicate the figures reported to the Committee as amounts which have been spent for surfacing in these cities.

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CHAPTER XVIII

OFFICE MANAGEMENT

Department Activities and Duties.—Every office exists for a definite purpose, namely, the making of the teaching and learning process more effective. It follows, then, that office routine must be very carefully planned if this purpose is to be served. Without planning, departments in colleges are likely to operate with little or no organization of administrative details. It is obvious that no two institutions will require the same office organization but procedures may best be developed from a study of the local situation. If a director wishes to check the effectiveness of his system, he must tabulate the functions connected with office management. A classified summary should be made of all departmental activities and individual duties, even in the smaller department, because it is in the smaller offices, where staff members and secretaries are required to attend to all sorts of details, that planning is paramount. The several functions of the department may be classified under administration, teaching, professional relations, and current office routine. An interesting plan is illustrated by the wall chart of departmental duties. The wide distribution of duties and responsibilities should be noted. Each staff member has at least one major responsibility and usually one or more minor responsibilities. Mr. G is director of intramural athletics and head coach of track. In addition, he teaches at least one class in hygiene and one in required physical education. He also assists in basketball. Dr. B not only is director of health service but he has responsibilities in connection with health supervision of the campus environment, health instruction, health supervision of athletes, major courses in teacher training, and committees.

This plan may be used for a combined department or for a single department like health service or intramural athletics.¹

Office Arrangement and Accessibility.—Efficient administration of health and physical education will depend in no small measure upon the location of the offices of the directors in relation to the various activities. Ease of access to examining room; gymnasium floor;

¹ Mitchell, E. D. "Intramurals in a Large University." *Proceedings, The College Physical Education Association, 1933*, p. 81.

DEPARTMENTAL DUTIES

	Director A. M.D. or Ph.D.	Dr. B. (M.D.)	Dr. C. (Ph.D.)	Mr. D.	Mr. E.	Mr. F.	Mr. G.	Mr. H.	Mr. J.	Miss K.	Miss L.	Miss M.	Miss N.	Miss O.	Miss P.	Mr. Q.	Dr. R.	Etc.
I. ADMINISTRATION																		
1. Policies	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O			
2. Financial budget	X															X		
3. Health Supervision	O	X	O														O	
4. Health Service	O	X	O														O	
5. Health Instruction	O	O	O					X									O	
6. Required P. E.	O	O	O						X	X								
7. Intramural Athletics	O						X				X							
8. Intercollegiate Athletics	X																	
9. Play Days	O									X								
10. Teacher Training	O					X												
11. Restricted and Corrective					X													
12. Health Supervision of Athletes		O																X
13. Et cetera																		
II. TEACHING AND COACHING																		
1. Hygiene classes	O	O	O	O	O	O	O	X	O	O	O	O	O	O	O			
2. Required P. E.				O	O	O	O	O	X	X	O	O	O	O	O			
3. Instructing Intramurals				O	O	O	O				O	O	O	O	O			
4. Football	O			X	O	O											O	
5. Basketball				X	O	O								X				
6. Baseball					X													
7. Track						X	O											
8. Tennis			X													X		
9. Swimming									X			X				O		
10. Golf				X														
11. Ice Hockey																		X
12. Field Hockey											X	O						
13. Archery										X	O							
14. Dancing										O	O	O	X			O		
15. Restricted & Corrective					X												X	
16. Apparatus & Tumbling																	X	
17. Major Courses	X	O	O	O	O	X	O	O	O	X	O	O	O					X
18. Et cetera																		
III. PROFESSIONAL RELATIONS																		
Addresses	X			X														
Committees	X	O	O	O	O	O	O	O	O	O	O	O	O					
Writings	X																	
Research	O			O				X	O		O				X			
Et cetera																		
IV. CURRENT																		
1. Telephone																O	X	
2. Correspondence																X	O	
3. Filing																X	O	
4. Informational Service																O	X	
5. Et cetera																		

X- Much responsibility.
O- Some responsibility.

A WALL CHART SHOWING THE DISTRIBUTION OF DUTIES AND RESPONSIBILITIES OF STAFF MEMBERS.

locker, shower, and dressing rooms; swimming pool; tennis courts; and athletic fields is desirable. This plan is exemplified in one of the four sections of the physical education building at the University of Rochester (Page 292) where the offices are built across the front of the building. This permits ease of access to the main gymnasium, lockers and showers, natatorium, basketball arena, baseball cage, tennis courts, and the varsity and intramural athletic fields bordering the building.

Offices in the elaborate new Payne Whitney Gymnasium at Yale University are admirably arranged for easy access to the many activities. The plan of the building (Page 289) includes a central unit, housing the general activities, two exhibition-hall wing units which flank the central unit, and four stories in the tower rising above the five-story elevation. The plan not only permits a partial segregation of varsity sports, but it localizes the facilities for general use. Although the huge gymnasium is 510 feet in length, 200 feet in depth, and 200 feet high in the tower, this arrangement shortens the distances between the several units. The main entrance is in the tower, a spacious lobby leading to four elevators which serve all upper floors and the basement. On either side of this hall a lobby leads to the Amphitheatre or the Exhibition Pool. A desk in the lobby directs visitors to the elevators, checks those individuals privileged to enter the central and wing units, and provides general information. Non-members of the gymnasium can reach only the balconies which are provided on all working floors. To get access to the activity parts of the building one must pass the Cashier's Office on the second floor, and from this point the main stairway becomes an exit only. On the second floor, in addition to the Cashier's Office, are located the check room, and the Manager's Office. Here the general business of the building is transacted, including the giving out of towels, lockers, and general information.

Equipment and Supplies.—Equipment and supplies for the department offices will include bookcases; calendars and memorandum pads; clock; desks; filing cabinets; lights, including desk lamps; letter trays; rugs; safe; scales; tables; telephone; waste paper baskets; and such supplies as ink, paper weights and cutters, scissors, paste, clips, rubber stamps, etc.

The type of desk generally recommended is the double-pedestal flat-top type of standard size (36×40 inches). In a small department where the director or his assistant is also clerk and stenographer a desk which must be constantly opened and closed is most inconvenient. A desk with a typewriter in the upper left-hand pedestal, or a single typewriter desk placed near the regular desk is to be preferred.

Each staff member and secretary should be provided with a desk

and filing cabinet and these should be arranged with respect to routine and comfortable working conditions. A cheerful and businesslike atmosphere should prevail so students who enter will feel at ease. This may be accomplished, in part at least, by a desire to serve the students and public. This attitude is reflected in the manner of answering the telephone, the mail, and personal inquiries.

Secretary and Other Personnel.—Secretarial help should be selected on the same bases as staff members, namely: personality, ability, intelligence, training, and experience. The secretary to the director of a large department might well have a foundation training in commercial courses and personnel work. She should be competent to handle much of the general business of the department, be able to differentiate between relatively important and unimportant matters, and refer to her employer only those requiring his particular attention. Her personal qualifications should include courtesy, poise, patience, ability to meet all types of people, and attractive appearance. Her duties include answering the telephone, attending to the correspondence, giving out information, arranging appointments and interviews, posting notices and schedules, and making reports. In a large department of health and physical education various members of the staff will require personal secretaries. The qualifications of these individuals should approximate those of the director's secretary.

The secretary and her assistants should act as a bureau of information and service for the department. They should be able at a moment's notice to answer questions regarding students; the location of staff members; schedules of practices, classes, games, and other events; athletic contests; prices of various kinds of equipment; etc.

Records and Reports.—No standard set of forms for records and reports has ever been devised for health and physical education in colleges and universities. Extreme standardization of this type is neither feasible nor desirable. This is true because institutions vary greatly in needs and, furthermore, they are not called upon to make periodic reports to a central state or national office. This does not mean, however, that record forms and reports should be devised and used promiscuously without carefully analyzing each as to its purpose, name, appearance, size, etc. Economy in time, labor, cost, and use is possible where *local* standards are established regarding size, appearance, arrangement of data, and type of paper. Recommended sizes for cards and forms are 3"×5", 4"×6", 5"×8", 7"×9½", and 8½"×11". These sizes can be cut most economically from standard commercial paper, and they are also the most convenient sizes for filing. A study of the forms and records now in use in college departments will show that in many cases little planning has been

done. In some instances too many forms have proved wasteful. Often a form is neither named nor numbered. Data used frequently are not always placed in a conspicuous place. Permanent forms are sometimes placed on cheap paper or temporary forms on expensive paper.

In one rather widely used plan the name of the department and the institution is placed in small bold-face type in the upper right-hand corner. The major designation or names and addresses appear in the upper left-hand corner. The most important data are neatly arranged on the body of the card with instructions printed at the bottom. All forms and cards are designated by name and number in small type.

Some of the more common health and physical education records and reports are listed below:

Health Supervision.—

- Janitor service rules and regulations.
- Rooming house approved list.
- Rooming house application form.
- Rooming house certificates for proprietors.
- Rooming house lease.
- Sanitary regulations for class rooms.
- Sanitary regulations for eating places.
- Sanitary regulations for rooming houses.
- Sanitary survey form.
- Et cetera.

Health Service.—

- Absence on account of illness forms.
- Annual report.
- Bulletins on health.
- Daily illness reports.
- Disability forms assigning students to restricted and corrective physical education.
- Follow-up health conference record cards.
- Health examination, entrance form.
- Health examination, employee's form.
- Health examination, pre-entrance form.
- Health history form.
- Health re-examination form for athletes or after illness.
- Individual health record form.
- News items regarding health of students.
- Notification of temporary or permanent illness to parents and deans.
- Physician's certificate.

Remediable defects card index.

Vaccination certificate.

Et cetera.

Health Instruction.—

Assignment to sections form.

Films on health.

Health habits record form.

Notebooks.

Pamphlets.

Posters.

Syllabus (course of study).

Required Physical Education.—

Absence slips.

Activities listed by seasons.

Attendance records.

Attendance rolls, daily.

Borrowing equipment permit.

Bulletin of information or handbook.

Check room receipt.

Choice of activity card.

Corrective exercises on cards.

Debit slip for lost articles.

Health rating form.

Individual corrective observation card.

Lost equipment notice.

Motor ability rating.

Permanent record card. (This card might well include the information listed on other cards, as attendance, health rating, motor ability rating, equipment record, grades, basket and locker numbers, etc.)

Posture charts.

Refund slip for lost articles.

Registration blanks.

Reservation forms for handball and tennis courts, bowling alleys, pool, etc.

Schedules of classes and activities.

Syllabus or course of study (program of activities.)

Towel and uniform permit.

Et cetera.

Intramural Athletics.—

Award record form.

Calendar of dates for leagues and tournaments.

Constitution.
Eligibility rules.
Entry blanks.
Fees, financial records.
News stories.
Participation records, individual and team.
Playing rules for the various sports.
Pictures.
Publicity items.
Records (forms for records times, distances, etc.)
Reminder or notification forms.
Reservation forms for practice and games.
Schedules.
Schedule cards for each team.
Score sheets and books.
Scoring chart, all-year group type.
Scrapbook.
Et cetera.

Intercollegiate Athletics.—

Athlete's individual record card.
Attendance records.
Contracts.
Coupon books.
Eligibility statements.
Equipment cards.
Financial reports.
Inventory records.
Manager's reports.
Officials' cards.
Purchase order forms.
Requisition blanks.
Rules for awards.
Scorebooks.
Team trip cards.
Ticket seller's report.
Track and field event forms for hurdles, jumps, etc.
Vouchers.
Et cetera.

General.—

Annual reports.
Budgets.
Handbooks, or bulletins of information.

Inventory blanks.
Purchase order blanks.
Requisition forms.
Scrapbooks.
Et cetera.

Files and Filing Methods.—The mechanics of filing includes collecting, classifying and filing current materials; such as, contracts, correspondence; health and other record cards, including the permanent record card; purchase orders, reports, schedules, vouchers, etc. Inactive materials should be transferred periodically from the active files to a storage space for reasons of economy of labor, space, and equipment. Steel filing cabinets are recommended.

Three methods.—Materials may be filed by one of three methods: *alphabetical*, *numerical*, or by *subject*. The *alphabetical* filing procedure is the most widely used and is best suited to the health and physical education office. The following guides should prove helpful in filing:

1. Classify all materials.
2. Divide materials into groups by alphabetical guides supplemented by special guides for the most active names and subjects.
3. Use individual folders for individual health examination records, for active correspondence and for gathering quantities of materials under one head.
4. Use miscellaneous folders for inactive correspondence.
5. Use lettered, numbered, or colored guide tabs.
6. Arrange tabs on the folders from left to right.
7. Indicate removed material by outguides.
8. Begin the order of placing materials in the file drawers on the left.
9. Place the guide tabs so they do not obstruct the names on the folders.

Subject filing or the alphabetical subject arrangement may be best adapted for certain departments. The subject guide takes the central place in the file, and alphabetical guides may be placed after the subject.

The *numerical* or indirect system of filing might be used to advantage in a very large institution.

Public Relations.—Educational administrators are discarding the word *publicity*. It has a bad connotation, and savors of propaganda, and press agents. The new term and the new service is sometimes called a public relations program or an organized factual informational

service² for the purpose of keeping the public informed regarding all aspects of the program. The economic depression has taught us that adequate public support for health and physical education can seldom, if ever, be attained without a campaign of education. But we cannot depend wholly upon the newspapers. Actual demonstrations of class work, student publications, prominent speakers, civic organizations, annual reports, radio addresses, are all means of bringing college health and physical education to the people. Administrators should devise a definite plan of keeping the public informed of their objectives and activities. Proceedings and journals of our sectional and national associations seldom get beyond the membership. Aims and objectives are unknown to a majority of the faculty, students, alumni, and general public. It is possible that we can use to better advantage convocations, civic organizations, student publications, annual bulletins, photographs, news stories, advertising, radio broadcasts, and annual reports.

The divisions of health and physical education might cooperate in issuing health bulletins bearing on health subjects, designed to call attention of students to points in hygiene which have a particular application at different seasons of the year. Special health talks, fire-side talks, health or sport films, pamphlets and posters aid in promoting health.

The Departmental Handbook or Bulletin of Information.—Every department of health and physical education regardless of the size of the institution, should prepare a departmental handbook or bulletin of information. This material may be combined in one book or issued in several booklets on health, required activities, intramural sports, etc. The materials may be mimeographed or printed. In the interests of economy and efficiency it would seem advisable to prepare one booklet with full information in printed form. Oberlin, Ohio State and Yale, among others, have excellent printed booklets. The suggested contents of a handbook for a department of health and physical education are listed below:

Health Education.

Personnel and advisors.

Facilities.

Services rendered for the fee (hospital, dental, orthopedic, x-ray, physical therapy, eye, ear, nose, throat, etc.).

² Hughes, W. L. "Problems of Administration in a Modern Program of Physical Education." Proceedings, Society of Physical Education in Colleges, 1930, p. 54.

Health regulations governing rooming houses, eating places, and class rooms.

Health examination instructions.

Vaccination requirement.

Supervision of athletics.

Hygiene sections.

Instructions for registration.

Required Physical Education.

Aims.

Facilities.

Personnel.

Program of activities.

Motor ability tests.

Health and ability ratings.

Attendance and excuses.

Costume.

Locker and basket system.

Towel and laundry plan.

Major and minor.

Restricted and corrective.

Leaders corps.

Instructions for registration.

How to use the physical education facilities.

Intramural Athletics.

Aims.

Facilities.

Personnel.

Program of sports.

Schedule of events.

Entrance fees.

Rules of play in the various sports.

Manager system.

Officials.

Point system and awards.

Eligibility rules.

Past winners.

Intercollegiate Athletics.

Coaching personnel.

Facilities.

Sports.

Manager system.

Eligibility rules.

Awards.

Schedules.

Past records.

Relations with the Faculty.—Reference was made in a previous chapter to a preliminary study of faculty recreation and the need for faculty understanding and cooperation. The department should encourage faculty participation in physical education activities by providing facilities and instruction when it is solicited.

Intramural News Service.—Intramural departments should keep in touch with the various teams and players by means of an intramural column in the student paper, circular notices, college calendar, postal cards, bulletin boards, and telephone communications. It is desirable that there be a special intramural sports editor on the student paper, and special arrangements for the dissemination of intramural athletic news among the alumni through the institution's official alumni publication. The yearbook should have a section on this phase of the program.

Intercollegiate News Service.—Information regarding intercollegiate athletics should be handled through the institution's publicity office and by the director of public relations or some assistant who is satisfactory to the publicity and athletic departments.³

National Organizations and Public Relations.—The national organizations of health and physical education are publicizing purposes and program in various ways that are helpful to the local director. The American Physical Education Association has a National Publicity Committee with subcommittees on radio education, rural education, civic and service clubs, American Legion, speakers' service, magazine service, films, health agencies, parent teacher associations, public relations with the National Education Association and state educational associations, etc.; and the Field Service of the Association, which is designed to assist in forming new local and state societies, and to interpret the program to various groups. The College Physical Education Association, The American Student Health Association, the National Collegiate Athletic Association and the coaches' organizations all aim to publicize purposes and programs by magazine articles, convention programs, and printed proceedings.

Finances.—Modern educational administration demands that all departments in a college be conducted on a strictly business basis. In the interest of economy it seems advisable to combine the financial administration of all health, required physical education, and athletic

³ Williams, J. F. and Hughes, W. L. *Athletics in Education*. W. B. Saunders Company, Philadelphia, 1930, p. 109.

activities. If this is done the total budget may seem excessive, but the department must not be judged solely on the basis of total expenditures. This division will serve more students and will therefore spend more money than other departments. Expenditures should be judged on the services rendered and costs per individual student.

Sources of Income.—Sources of income for health and physical education include student fees, gate receipts, endowments, trustees' appropriations, contributions, subscriptions, and gifts.⁴ Health service is usually financed by a *student health fee* ranging in amount from 50 cents to as high as \$30.00. The average fee is approximately \$7.00 to \$10.00 per year and should be sufficient in amount to supply the necessary service to students without the inconvenience of collecting small amounts. Definite regulations governing the amount of medical and hospital service, in return for the health fee should be made known to students.

The instructional or service phase of physical education should be financed by general funds appropriated by the institution and raised by taxation or endowment. Since this is not always feasible the private institutions usually levy a compulsory *physical education (and athletic) fee* while state institutions ordinarily appropriate a small sum for required classes and sell season tickets for athletic contests to students in the form of coupon books. If a compulsory physical education (and athletic) fee is to be justified it is essential that the program be broadly conceived and developed so that it is suited to men and women of varying interests, needs and abilities.

The *student activity fee* does not appear to be the most desirable method of raising funds for health and physical education.⁵ The provision of an activity fee assumes that required physical education and athletics are "extracurricular."

Ideally, intramural athletics should be run on a budget basis with funds appropriated by the institution for physical education. Unfortunately, some departments must depend for existence upon intercollegiate gate receipts, entrance fees, or intramural gate receipts.

Intercollegiate athletic monies, including gate receipts, and amounts from other sources should be considered college funds, and centralized with the other funds of the institution under one financial (expert) officer, the college or university treasurer.

Budgets.—The budget is a complete financial plan for a definite period and is based upon a careful estimate of needs, expenditures,

⁴ Williams, J. F. and Hughes, W. L. Op. cit., p. 149.

⁵ Round Table Conference, "The Athletic Budget." Supplement to the Proceedings of the National Collegiate Athletic Association, 1933. Pp. 28-30.

and probable income.⁶ It is a statement of estimated receipts and expenditures. Before it can be prepared, an estimate of the future income and outgo of funds for the entire program of health and physical education should be formulated. Data should be gathered, and analyzed. Expenditures should be classified and distributed. To successfully prepare a budget, information for the past five or ten years should be available. Salaries for physicians, nurses, coaches, and all other members of the staff should appear on the regular budget for instruction.

Table III is the outline form of a budget covering all health and physical education activities in a university.

TABLE III

OUTLINE OF A COLLEGE OR UNIVERSITY BUDGET

A. Office—General

I. *Income*

1. Appropriations
2. Gifts, etc.

II. *Expenditures*

1. Salaries
2. Supplies
3. Professional travel
4. Et cetera

B. Health Education

I. *Income*

1. Student health fees
2. Appropriations
3. Gifts and funds
4. X-ray service
5. Laboratory
6. Special therapy
7. Room rent
8. Et cetera

II. *Expenditures*

1. Administration (Salaries, supplies, telephone, etc., either here or under *Office*)
2. Care of patients
 - a. Nurses' salaries (either here or under *Office*)
 - b. Drugs and medicine

⁶ Williams, J. F. and Hughes, W. L. Op. cit., p. 155.

- c. Supplies and instruments
- d. X-ray material
- e. Laboratory supplies
- f. Miscellaneous
- 3. Maintenance and operation
 - a. Heat, light, water, janitors' salaries, etc., either here, or under *Office* or on the budget for Buildings and Grounds.
- 4. Laundry
- 5. Dietary

C. Required Physical Education

I. *Income*

- 1. Appropriation
- 2. Student fees
- 3. Locker and towel fees
- 4. Charges for lost articles
- 5. Et cetera

II. *Expenditures*

- 1. Equipment
- 2. Laundry and repairs
- 3. First aid
- 4. Officials
- 5. Awards
- 6. Refunds

D. Intramural Athletics

I. *Income*

- 1. Appropriation
- 2. Gifts
- 3. Student fee for physical education
- 4. Gate receipts (intercollegiate and intramural)
- 5. Entrance fees
- 6. Forfeit fees

II. *Expenditures*

- 1. Equipment
- 2. First Aid
- 3. Printing and supplies
- 4. Officials
- 5. Laundry and repairs
- 6. Awards
- 7. Refund of forfeit fees
- 8. Locker charges, if any
- 9. Rental of equipment
- 10. Et cetera

E. Intercollegiate AthleticsFootball ⁷**I. *Income***

1. Appropriations
2. Gifts
3. Student compulsory athletic fee, or funds from sale of coupon books
4. Gate receipts
5. Guarantees
6. Et cetera

II. *Expenditures*

1. Equipment
2. Travel
3. Guarantees and division of receipts
4. Medical attention and supplies
5. Publicity and advertising
6. Officials
7. Scouting
8. Laundry and repairs
9. Awards
10. Miscellaneous

Basketball

I. *Income*

1. Fees
2. Et cetera

II. *Expenditures*

1. Equipment
2. Et cetera

Other Sports

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⁷ *Ibid.*, pp. 159-163.

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